floods, fire floods, carbon dioxide injection projects, high-density well drilling projects, and approved technologies that are either unconventional or in any way redirect the natural movement of oil or gas or formation water in the pool. Enhanced recovery typically involves the use of injection wells of some kind as part of a production unit.

2. Enhanced recovery injection well, an injection well used to move underground fluids to production wells through the use of water, steam, gas, or any other substance in order to redirect or facilitate the natural movement of oil, gas, or water in a pool.

3. Exempted aquifer, an aquifer or its portion that meets the criteria in the definition of Underground Source of Drinking Water set forth in paragraph (1)(U)1. of this rule but which has been exempted for operation of an injection well.

(F) Terms beginning with the letter F.

1. Fluid, any material or substance which flows or moves whether in a semi-solid, liquid, sludge, or gaseous state.

2. Formation water, water that occurs naturally within the pores of a geologic formation or stratum.

(G) Terms beginning with the letter G.

1. *(Reserved)*

(H) Terms beginning with the letter H.

1. Horizontal well, a well drilled at an angle to the vertical, typically parallel to the geologic strata containing oil or gas.

(I) Terms beginning with the letter I.

1. Increased well density, the drilling of an additional primary production well in a spacing unit.

2. Injection, emplacement of fluids into the subsurface through a well.

3. Injection well, a well into which fluids are injected during all or part of the life of the well for disposal or enhanced recovery projects or for underground storage of gas that is liquid at standard temperature and pressure, but not including oil- or gas-producing wells undergoing approved well stimulation treatment.

4. Injection zone, a geological stratum, group of strata, or part of a stratum that receives fluids through a well.

(J) Terms beginning with the letter J.

1. (Reserved)

(K) Terms beginning with the letter K.

1. (Reserved)

(L) Terms beginning with the letter L.

1. Location exception, authorization given by the state geologist to drill a well at a location other than that which is prescribed by these regulations.

(M) Terms beginning with the letter M.

1. Mechanical integrity, a well has mechanical integrity if there is no significant leakage in the casing, tubing, or packer; and there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the wellbore.

2. Missouri nomenclature, Missouri-specific geologic terminology as provided by the state geologist including, but not limited to, names of geologic strata, pools, and geologic features.

3. Multiple completion, the completion of any well that permits production from two (2) or more pools that are completely segregated by confining strata.

(N) Terms beginning with the letter N.

1. *(Reserved)*

(O) Terms beginning with the letter O.

1. Observation well, a well that is used to monitor the operational integrity and conditions of oil, gas, and storage operations, including physical or chemical parameters of a reservoir or geologic formation or strata, and is not used currently as a production, injection, disposal, or water well.

2. Oil and Gas Remedial Fund, the fund established by section 259.190.5, RSMo into which forfeited bond monies and proceeds from the sale of illegal oil, illegal gas, and illegal product are deposited, which is to be used for plugging abandoned wells as provided for in 10 CSR 50-2.060(3)(F).

3. Oil and Gas Resources Fund, the fund established by section 259.052, RSMo, into which all gifts, donations, transfers, moneys appropriated by the General Assembly, permit application fees, operating fees, closure fees, late fees, severance fees, and bequests are deposited, which is to be used to administer the provisions of Chapter 259, RSMo, and implementing regulations, and to collect, process, manage, interpret, and distribute geologic and hydrologic resource information pertaining to oil and gas potential.

4. Open well, a well that has not been plugged including, but not limited to, abandoned, operating, or shut-in wells.

5. Operator, a person who drills, maintains, operates, or controls wells associated with oil or gas production, storage, or injection projects.

(P) Terms beginning with the letter P.

1. Person, any individual, partnership, co-partnership, firm, company, public or private corporation, association, joint stock company, trust, estate, governmental or political subdivision, or any other legal entity.

2. Plugged well, a well that has been filled or partially filled with cement or other materials to prevent the migration of fluids within the well.

3. Pooling, the contractual agreement of those holding the rights to mineral interests within a single spacing unit for primary production, whether that agreement is voluntary or by order of the council, to produce oil or gas or both from that unit.

4. Primary production, the process of recovery of oil or gas from a pool in which one (1) well is capable of efficiently draining the pool or portion thereof that resides within the confines of the spacing unit and the drainage of oil, gas, or formation water into the well occurs naturally.

5. Private domestic consumption, gas used from an on-site well(s) for the sole purpose of providing gas for a private dwelling or business and not for resale or trade.

6. Produced water, formation water that is associated with the production of oil or gas and either requires disposal or is used as part of an enhanced recovery project.

7. Production unit, an uninterrupted block of acreage of any size and any shape that has a definite outer boundary and in which wells may be drilled for enhanced recovery. The acreage that composes a production unit may include default spacing units, acreage for which spacing units have or have not been explicitly ordered by the state geologist or council, pooled or non-pooled mineral acreage, and all or parts of past and present production units.

8. Production well, any well used for recovery of oil or gas or both.

(Q) Terms beginning with the letter Q.

1. (Reserved)

(R) Terms beginning with the letter R.

1. Recompletion, the process of reworking or repairing a well after its initial well completion.

2. Reference well, a well used to collect data to establish a maximum injection pressure as approved by the state geologist.

(S) Terms beginning with the letter S.

1. Seismic shot hole, a hole drilled for the purpose of generating a seismic signal to be used in the exploration or development of oil or gas or both.

2. Shut-in well, any well that has not been operated for ninety (90) calendar days or more.

3. Spacing Unit, an arbitrary block of acreage of specified size and shape for a single pool that is based on the U.S. Public Land Survey System in which only one (1) production well may be drilled for primary production that is no closer than a specified minimum distance from the unit boundary.

4. Special project, research and development of a new process or technology that increases the amount of oil or gas recoverable from a pool or improves oil or gas operations.

5. Spill or release, any threatened or real emission, discharge, spillage, leakage, pumping, pouring, emptying, or dumping of a substance into or onto the land, air, or waters of the state, unless done in compliance with the conditions of a federal or state permit, unless the substance is confined and is expected to stay confined to property owned, leased, or otherwise controlled by the person having control over the substance.

6. Spud date, the date of first penetration of the earth with a drilling bit.

7. Storage well, a well used to inject or extract natural gas or other gaseous hydrocarbons for storage purposes.

8. Stratum or strata, a layer or layers of rock composed of substantially the same lithology that is distinctive visually from other layers above and below; often a lithologic unit.

9. Stratigraphic test well, a well drilled to obtain information on the thickness, lithology, sequence, porosity, permeability, or any other properties of rock, or to locate the position of a geologic horizon in the evaluation of potentially productive oil or gas strata and is not utilized for generating a seismic signal.

(T) Terms beginning with the letter T.

1. (Reserved)

(U) Terms beginning with the letter U.

1. Underground source of drinking water, an aquifer or any portion thereof that—

A. Supplies any private well or public water supply system; or

B. Contains a sufficient quantity of groundwater to supply a private well or public water system; and

(I) Currently supplies drinking water for human consumption; or

(II) Contains less than ten thousand (10,000) mg/L total dissolved solids; and

C. Is not an exempted aquifer.

2. Unitization, the contractual agreement of mineral interests owners to form a production unit through a voluntary process or order of the council, to produce oil or gas from that production unit and to designate the operator of the unit.

(V) Terms beginning with the letter V.

1. (Reserved)

(W) Terms beginning with the letter W.

1. Waters of the state, has the same meaning as defined in the Missouri Clean Water Law, section 644.016, RSMo.

2. Well, has the meaning as defined in section 259.050(16). Wells drilled for the production of water are regulated by the Water Well Drillers' Act, Chapter 256, RSMo, and the implementing Missouri Well Construction rules, 10 CSR 23. A well includes, but is not limited to, the following:

A. Disposal well;

B. Enhanced recovery injection well;

C. Horizontal well;

D. Injection well;

E. Observation well;

F. Production well;

G. Seismic shot hole;

H. Storage well; or

I. Stratigraphic test well.

3. Well stimulation treatment, a treatment of a well designed to enhance oil and gas production or recovery by increasing the secondary permeability of the geologic strata. Well stimulation is a short-term and non-continual process for the purposes of opening and stimulating channels for the flow of oil or gas or both. Examples of well stimulation treatments include hydraulic fracturing, acid fracturing, and acid matrix stimulation. Well stimulation treatment does not include routine well cleanout work; routine well maintenance; routine treatment for the purpose of removal of geologic strata damage due to drilling; bottom hole pressure surveys; routine activities that do not affect the integrity of the well or the geologic strata; the removal of scale or precipitate from the perforations, casing, or tubing; or a treatment that does not penetrate into the geologic strata more than thirty-six (36) inches from the wellbore.

4. Whipstock, a long wedge-shaped steel device or casing that uses an inclined plane to cause the bit to deflect from the original borehole at a slight angle, sometimes used in an oil or gas well to control directional drilling, to straighten crooked boreholes, or to sidetrack to avoid unretrieved items left in a well.

(X) Terms beginning with the letter X.

1. (Reserved)

(Y) Terms beginning with the letter Y.

1. (Reserved)

(Z) Terms beginning with the letter Z.

1. (Reserved)

(2) All other words used in this rule have their usual customary and accepted meaning, and all words of a technical nature, or specific to the oil and gas industry, will be given that meaning which is generally accepted in the oil and gas industry.

AUTHORITY: sections 259.050, 259.070, 259.140, and 259.190, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 22, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Sept. 13, 1983, effective Dec. 11, 1983. Amended: Filed May 18, 1987, effective July 24, 1987. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.050, RSMo 1965, amended 1972, 1987, 2015; 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015; 259.140, RSMo 1965; and 259.190, RSMo 1965, amended 1983, 2015.*

10 CSR 50-1.040 Enforcement Action and Appeal Procedures

PURPOSE: This rule outlines the procedures the state geologist and council will take when an alleged violation has occurred or when an operator is affected by an adverse action.

(1) The state geologist shall cause investigations to be made upon the request of the council or upon receipt of information concerning alleged violations of Chapter 259, RSMo, and implementing regulations or any standard, limitation, or order pursuant thereto, or any term or condition of any permit, and may cause to be made any other investigations consistent with the purposes of Chapter 259, RSMo.

(2) If, in the opinion of the state geologist, an investigation discloses that a violation of Chapter 259, RSMo, or implementing regulations does exist, the state geologist may issue an order as provided in section 259.070, RSMo, requiring the remediation or abatement of the specified condition(s). The order shall be served by registered mail, return receipt requested. The order shall specify the violations of Chapter 259, RSMo, or implementing regulations or any standard, limitation, or order pursuant thereto, or any term or condition of any permit violated.

(3) Any person adversely affected by an order or denial of a permit, license, or transfer issued by the state geologist may appeal the order or denial of a permit, license, or transfer to the council within thirty (30) calendar days of the date the state geologist issued the order or denial. The appeal must be sent by registered or certified mail to the chairperson of the council. The council shall treat the appeal as a contested case consistent with Chapter 259 and Chapter 536, RSMo. The council may conduct any hearing it requires to decide the appeal, or may appoint a hearing officer to make a recommended decision. If the council elects to appoint a hearing officer, the hearing officer must be a licensed attorney and a member in good standing of the Missouri Bar. The council may sustain, reverse, or modify the state geologist's order or denial of a permit, license, or transfer or may make such other orders as it deems appropriate under the circumstances, subject to rights of judicial review as provided in section 259.170, RSMo. If any order or denial

of a permit, license, or transfer issued by the state geologist is not appealed within the time provided in this section, the order or denial of a permit, license, or transfer becomes final and may be enforced as provided in sections 259.200 and/or 259.210, RSMo.

AUTHORITY: sections 259.140, 259.150, 259.160, 259.170, and 259.200, RSMo 2000, and section 259.070, RSMo Supp. 2015. Original rule filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015; 259.140, RSMo 1965; 259.150, RSMo 1965; 259.160, RSMo 1965; 259.170, RSMo 1965; and 259.200, RSMo 1965.*

10 CSR 50-1.050 Assessment of Costs

PURPOSE: This rule establishes a fee structure for activities conducted under 10 CSR 50.

(1) Beginning January 1, 2017, the following fees shall be assessed and deposited in the Oil and Gas Resources Fund:

(A) A fee of two hundred fifty dollars ($250) paid upon the submittal of an initial or renewal application for an operator license; except as provided in subsection (B);

(B) A fee of fifty dollars ($50) paid upon submittal of an initial or renewal application for an operator license by an applicant who solely operates a non-commercial gas well;

(C) A fee of one hundred dollars ($100) paid upon submittal of an application for a permit to drill, deepen, plug-back, or recomplete as follows:

1. Any new application for permit to drill, deepen, plug-back, or recomplete any well;

2. Any application for modification to the permit to drill, deepen, plug-back, or recomplete; or

3. Blanket requests to drill, deepen, plug-back, or recomplete wells proposed to depths no greater than one thousand five hundred feet (1500');

(D) A fee of one hundred dollars ($100) paid upon submittal of an application for a permit to inject as follows:

1. Any new application for a permit to inject in any well; or

2. Any application for modification to the initial injection well permit including, but not limited to, an increase in the maximum injection pressure and/or the maximum injection rate;

3. No fee will be assessed for a modification to an injection permit as specified in 10 CSR 50-2.055(5)(B);

(E) A fee of twenty-five dollars ($25) paid upon submittal of an application for extension of the shut-in status of a well;

(F) A fee of fifty dollars ($50) paid upon submittal of a plugging record for each well plugged;

(G) A fee of sixty cents ($0.60) on each barrel of oil sold or marketed each month assessed to each operator. The fee and assessment apply only to the first purchase of oil from the operator and will be collected and submitted by the first purchaser of oil;

(H) A fee of seven and one-tenth cents ($0.071) on each one thousand (1,000) cubic feet of gas sold or marketed each month assessed to each operator. The charge and assessment apply only to the first purchase of gas from the operator and will be collected and submitted by the first purchaser of gas;

(I) A late fee of no more than one hundred dollars ($100) per month assessed against the responsible party each month until the form or report has been submitted. In no case, however, will a late fee exceed one thousand two hundred dollars ($1,200) per violation for each well.

(2) Fee nonrefundable. Once paid, each fee is nonrefundable.

AUTHORITY: sections 259.052 and 259.080, RSMo 2016. Original rule filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.052, RSMo 2015 and 259.080, RSMo 1965, amended 1972, 2015.*

Rules of
Department of Natural Resources
Division 50—Oil and Gas Council
Chapter 2—Oil and Gas Drilling and Production

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 50—Oil and Gas Council
Chapter 2—Oil and Gas Drilling and Production

10 CSR 50-2.010 Operator License

PURPOSE: This rule provides for the filing of information that identifies those responsible for oil and gas exploration, production, or related industry activities regulated by the council. The operator license is necessary in order to properly process bonding, well permitting, producing, plugging, and other council regulated activities and to make sure that the person making application is, in fact, authorized to represent a person, firm, or corporation.

(1) No person shall engage in oil or gas operations pursuant to Chapter 259, RSMo, and implementing regulations without first obtaining or renewing an operator license from the department, even if the well or storage facility is shut in or idle.

(2) Application for an operator license.

(A) An application for an operator license shall be completed in full on a form provided by the department and submitted, along with the applicable fee pursuant to 10 CSR 50-1.050, to the state geologist for approval.

(B) The state geologist will review the application for operator license and, within fifteen (15) business days, determine if the application is in proper form and if the requirements of Chapter 259, RSMo, and implementing regulations are met. If the application is incomplete or lacking information, forms, or fees, the state geologist will notify the applicant and suspend the application process. When the missing form, information, or fee is submitted by the applicant and received by the state geologist, the fifteen (15) business day review period will begin anew. If the state geologist has not received the missing or incomplete application information or fee within thirty (30) days after notification of the applicant, the application will be considered null and void and the applicant must reapply by submitting a new application for an operator license along with the associated fee.

1. If the state geologist finds that the application is in good form, that all requirements of the application have been met, and that Chapter 259, RSMo, and implementing regulations are being met, the state geologist will issue the operator license.

2. If the state geologist determines either that the application is not in proper form, that the applicant failed to submit the applicable fees, or that Chapter 259, RSMo, and implementing regulations are not being met, the application will be denied.

3. If the state geologist determines that the applicant is in violation of any provision of Chapter 259, RSMo, or implementing regulations, the state geologist may deny the application.

4. If the state geologist has not taken action by the prescribed fifteen (15) business day review period, the application shall be considered denied.

(3) License Renewal.

(A) An operator license issued pursuant to this section expires on January 1 of the year immediately following issuance of the license. An operator may apply to renew the operator's license by submitting an application to the state geologist for approval. This application shall be completed in full and submitted on a form provided by the department, along with the fee pursuant to 10 CSR 50-1.050, on or before January 1 each year.

(B) A late fee pursuant to 10 CSR 50-1.050 will be assessed if the renewal is submitted after the expiration date.

(C) If the state geologist determines that the licensee is in violation of any provision of Chapter 259, RSMo, or implementing regulations, the state geologist may deny the operator license renewal.

(4) Suspension or revocation of operator license.

(A) The state geologist may issue an order to suspend or revoke an operator license if the state geologist determines that the licensee has violated any provision of Chapter 259, RSMo, or implementing regulations.

(B) The order of suspension or revocation shall state the reason(s) for suspension or revocation, the effective date of the suspension or revocation, and the conditions under which the suspension or revocation would be rescinded. The order will be sent registered or certified mail to the licensee's last known address. The licensee may appeal the suspension or revocation as provided in 10 CSR 50-1.040(3).

(5) After any change occurs as to facts stated in the application as submitted and filed, except change of ownership, a supplementary application shall be filed with the state geologist with respect to the change within thirty (30) calendar days after the effective date of change.

(6) Any open well shall not be transferred from one (1) operator to another operator without approval of the state geologist. No less than thirty (30) calendar days prior to the planned transfer, an operator (transferor) shall submit to the state geologist, on a form provided by the department, a request to transfer any open well(s). Any such request may be denied if the state geologist determines that the submitted information is incomplete.

(A) The state geologist will review the completed transfer request and, within fifteen (15) business days, approve or deny the request based upon the following requirements:

1. The transfer of the well(s) is agreed upon by both the transferor and by the transferee;

2. The transferee holds a current operator license issued by the state geologist;

3. The transferee has bonding pursuant to 10 CSR 50-2.020 in place;

4. A list of American Petroleum Institute (API) numbers for all open wells on the lease, spacing unit, production unit, or gas storage facility submitted with the request to transfer; and

5. The transferor may be required by the state geologist to conduct a mechanical integrity test as a condition of the transfer.

(B) If the request to transfer is incomplete, the state geologist will notify the operator and suspend the review process. When all necessary information is received by the state geologist, the fifteen (15) business day review period will begin anew. If the state geologist has not received the necessary information within thirty (30) days after notification of the operator, the request will be considered null and void and the operator must submit a new transfer request.

(C) If the state geologist has not taken action by the prescribed fifteen (15) business day review period, the transfer shall be considered denied.

AUTHORITY: section 259.070, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 10, 1979, effective Feb. 1, 1980. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.020 Bonds

PURPOSE: Bonding is necessary before an operator commences oil or gas drilling or

operations to insure compliance with the provisions of Chapter 259, RSMo, and the rules of the council, specifically with reference to the proper plugging for abandonment of a well(s).

(1) Prior to commencement of drilling or other operations, the operator commencing such drilling or operations shall make, or cause to be made, for each well a good and sufficient bond that—

(A) Is secured by an approved financial assurance instrument payable to the state of Missouri, conditioned upon the performance of the duty to comply with all of the laws of the state and the rules and orders of the council;

(B) Is submitted on a form provided by the department and approved by the state geologist; and

(C) Remains in full force and effect until a letter of release is issued by the state geologist or the bond is forfeited as provided in section (6) below.

(2) Bond Amounts. Bond amounts, as determined by the council, shall be no less than the following amounts:

MINIMUM SINGLE WELL BOND
Depth of Well

From	To	Amount
0'	500'	$1,100
501'	1000'	$2,200
1001'	2000'	$3,300
2001'	5000'	$4,400
5001'	_____	$5,500 plus $2/foot beyond 5001 feet

Bonds for horizontal wells shall be based on the total measured length of the wellbore from the surface to the depth of the deepest producing horizon.

MINIMUM BLANKET WELL BOND
Depth of Well

From	To	Amount	Number of Open Wells/bond
0'	800'	$22,000	40 wells
801'	1500'	$25,000	10 wells

Wells greater than one thousand five hundred feet (1500') in depth must be bonded individually by a single well bond.

(A) A blanket bond amount may be increased by the single well bond amount (which varies depending on the depth of the well—see Minimum Single Well Bond table) for every unplugged well in excess of the maximum allowable unplugged wells per blanket bond as shown in the Minimum Blanket Well Bond table.

(B) Operators of all wells permitted prior to March 30, 2016, shall maintain existing bonding amounts for such wells until they are transferred pursuant to 10 CSR 50-2.010(6), deepened, plugged-back, or recompleted pursuant to 10 CSR 50-2.030, or plugged pursuant to 10 CSR 50-2.060(3).

(C) Operators of all wells permitted or transferred on or after March 30, 2016, shall comply with bonding amounts stipulated in the Minimum Single Well Bond table or the Minimum Blanket Well Bond table prior to permit issuance or transfer approval.

(3) Financial assurance instruments. The state geologist may accept as financial assurance instruments surety bonds, certificates of deposit, and irrevocable letters of credit.

(A) Surety bonds shall be subject to the following conditions:

1. Only irrevocable surety bonds shall be accepted. No bond of a surety company shall be cancelled for any reason whatsoever, including, but not limited to, nonpayment of premium, bankruptcy, or insolvency of the operator or issuance of notices of violations or cessation orders and assessment of penalties with respect to the operations covered by the bond, except that surety bond coverage for wells not drilled may be cancelled if the surety provides written notification and the state geologist is in agreement. The state geologist shall advise the surety, within thirty (30) days after receipt of a notice to cancel bond, whether the bond may be cancelled;

2. The surety shall be licensed to conduct a surety business in Missouri; and

3. Both the surety and the operator shall be primarily liable for completion of any remedial actions, including, but not limited to, well plugging, with the surety's liability being limited to the amount of the bond.

(B) Certificates of deposit shall be subject to the following conditions:

1. The certificate(s) shall be in the amount of the bond or in an amount greater than the bond and shall be made payable to or assigned to the state of Missouri, both in writing and upon the records of the institution issuing the certificates, and shall be automatically renewable at the end of the term of the certificate. If assigned, institutions issuing the certificate(s) waive all rights of set off or liens against the certificate(s);

2. No single certificate of deposit shall exceed the sum of two hundred fifty thousand dollars ($250,000) nor shall any permittee submit certificates of deposit aggregating more than two hundred fifty thousand dollars ($250,000) or the maximum insurable amount as determined by the Federal Deposit Insurance Corporation from a single institution. The institution issuing the certificate of deposit must be insured by the Federal Deposit Insurance Corporation (FDIC);

3. Any interest on the certificates of deposit shall be made payable to the operator; and

4. The certificate of deposit shall be kept until the bond is released by the state geologist.

(C) Letters of credit shall be subject to the following conditions:

1. The letter of credit shall be no less than the face amount of the bond and shall be irrevocable. A letter of credit used as security shall be forfeited and collected by the state geologist if not replaced by other suitable bond or letter of credit at least thirty (30) days before its expiration date;

2. The beneficiary of the letter of credit shall be the state of Missouri;

3. The letter of credit shall be issued by a bank authorized to do business in the United States. If the issuing bank is located in another state, a bank located in Missouri must confirm the letter of credit. Confirmations shall be irrevocable and on a form provided by the department;

4. The letter of credit shall be governed by Missouri law. The Uniform Customs and Practice for Documentary Credits, fixed by the International Chamber of Commerce, shall not apply;

5. The letter of credit shall provide that the state geologist may draw upon the credit by making a demand for payment, accompanied by his/her statement that the operator's bond has been declared forfeited; and

6. The issuer of a letter of credit or confirmation shall warrant that the issuance will not constitute a violation of any statute or regulation which limits the amount of loans or other credits which can be extended to any single borrower or customer or which limits the aggregate amount of liabilities which the issuer may incur at any one (1) time from issuance of letters of credit and acceptances.

(D) Notification Requirements.

1. In the event the surety company becomes unable to fulfill its obligation under the bond for any reason, notice shall be given immediately to the operator and the state geologist.

2. The surety company or financial institution issuing the financial assurance instrument for bonding purposes shall give prompt notice to the state geologist and the operator of any change in name or address of

the institution, or any insolvency or bankruptcy of the institution or any notice received or action filed alleging the insolvency or bankruptcy of the institution or alleging any violations of regulatory requirements which could result in suspension or revocation of the institution's license to do business.

3. The financial assurance instrument shall provide a mechanism for a surety company or financial institution to give notice per paragraph 2. above.

4. Upon the incapacity of any surety company or financial institution by reason of insolvency or bankruptcy, or suspension or revocation of its charter or license, the operator shall be deemed to be without bond coverage in violation of section (1). The state geologist, upon notification of the institution's bankruptcy or insolvency, or suspension or revocation of its charter or license, shall issue a notice of violation against any operator who is without bond coverage. The notice shall specify a thirty- (30-) day period to replace bond coverage. If the financial assurance instrument is not replaced in thirty (30) days, an order shall be issued by the state geologist requiring immediate cessation of operations. Operations shall not resume until the state geologist has determined that an acceptable bond secured by an approved financial assurance instrument has been posted.

(4) Replacement of bonds. Operators may replace existing surety or personal bonds with other surety or personal bonds. Existing bonds will not be released until the operator has submitted and the state geologist has approved acceptable replacement bonds.

(5) Bond Release. Application for release of a bond, and any instruments securing the bond, shall be made by written notice to the state geologist who will issue the letter of release after plugging of the well, or after a new bond, and any instruments securing the bond, is filed by a successor and an appropriate well transfer form is submitted pursuant to 10 CSR 50-2.010(6), and if the requirements of Chapter 259, RSMo, and implementing regulations have been met.

(6) Bond Forfeiture.

(A) If an operator fails to comply with an order of the state geologist, the state geologist shall issue an order declaring all applicable bonds to be forfeited.

(B) If a well is abandoned, plugged, or determined to have not been drilled, and the operator does not respond within six (6) months to reasonable attempts by the state geologist to contact that operator via information provided, the state geologist shall issue an order declaring the applicable bond forfeited.

(C) If the state geologist determines that the surety or issuer of a letter of credit or certificate of deposit desires to, and is capable of, completing remedial actions, including, but not limited to, well plugging, the state geologist, under additional terms and conditions as deemed necessary by the state geologist, may enter into an agreement with the surety or issuer of a letter of credit or certificate of deposit on a set schedule of compliance in lieu of collection of the forfeited bond. The remedial actions shall be in accordance with a compliance schedule that meets the conditions of the state geologist. The performer of remedial actions shall also demonstrate that they have the ability to satisfy the conditions. If the surety or issuer of a letter of credit or certificate of deposit fails to complete the remedial actions according to the schedule of compliance, the state geologist shall take action to collect the forfeited bond and any instruments securing the bond.

(D) The entry of an order declaring a bond forfeited shall automatically authorize the state geologist, with the assistance of the attorney general, if necessary, to take whatever actions are necessary to collect the forfeited bond and any instruments securing the bond.

AUTHORITY: section 259.070, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 10, 1979, effective Feb. 1, 1980. Amended: Filed Sept. 13, 1983, effective Dec. 11, 1983. Amended: Filed May 18, 1987, effective July 24, 1987. Amended: Filed Dec. 20, 1988, effective May 25, 1989. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.030 Application for Permit to Drill, Deepen, Plug-Back, or Recomplete

PURPOSE: This rule provides for information needed for the permitting of drilling of new wells or reworking existing wells and establishes procedures for the determination of their locations (distances from unit lines, other producing wells, etc.), according to classifications of the well(s). It also establishes procedures to be followed by the state geologist in issuing or denying permits.

(1) Prior to commencement of operations, application for a permit to drill, deepen, plug-back, or recomplete any well shall be submitted to and approved by the state geologist.

(2) The application for a permit to drill, deepen, plug-back, or recomplete shall be completed in full and submitted on a form provided by the department along with the applicable fee pursuant to 10 CSR 50-1.050.

(3) Well location.

(A) All applications shall include an accurate well location map showing the following:

1. Approximate location of the well within the section or quarter section;

2. Approximate distance to the nearest existing or proposed well;

3. Approximate distance to the nearest perceived spacing unit line or production unit line;

4. Names and addresses of the owners of the property on which the well is located;

5. A north arrow and a scale; and

6. For a horizontal well, the proposed location of the wellbore's path and terminus.

(B) The proposed well location shall be provided using latitude and longitude based on the North American Datum of 1983 (NAD 83) and expressed in the decimal form to the fifth place. Any well that is found to not meet the minimum location requirements upon completion may be ordered to be plugged by the state geologist.

(C) A drilling location may be moved up to fifty feet (50') from the approved location, if the new location does not violate spacing or setback requirements, without filing a revised permit application. Such changed location shall be noted on the well completion report.

(4) Seismic shot holes. Seismic operations shall not initiate new fractures or propagate existing fractures in the confining strata of underground sources of drinking water.

(5) Blanket permits to drill, deepen, plug-back, or recomplete.

(A) An operator engaged in drilling wells to depths no greater than one thousand five hundred feet (1500') may request that the state geologist approve prospective well locations on a blanket basis. The applicable fee pursuant to 10 CSR 50-1.050(1)(C)3. shall be submitted with the request. Bonding must be in place for all proposed wells in the blanket request. The request shall be accompanied by a plat of the entire production unit that—

1. Indicates the unit boundaries, the location of, and identifying by number, all wells which have been drilled or are proposed;

2. Uses appropriate symbols to distinguish between them; and

3. Conforms to the requirements specified in section (3) of this rule.

(B) In the event the state geologist approves the blanket requests, the approved locations may be drilled in the operator's order of preference. Locations of stratigraphic test wells may be moved within the established production unit at the operator's discretion. A permit application and applicable fee pursuant to 10 CSR 50-1.050(1)(C)1. for each well commenced shall be sent to the state geologist within twenty-four (24) hours, or the next business day, after the commencement of drilling of each well.

(6) Upon application for a permit to drill, deepen, plug-back, or recomplete, the state geologist will review the application and, within fifteen (15) business days, determine if the application is in proper form and if the requirements of Chapter 259, RSMo, and implementing regulations are met. If the application is incomplete or lacking information, forms, or fees, the state geologist will notify the operator and suspend the application process. When the missing form, information, or fee is submitted by the operator and received by the state geologist, the fifteen (15) business day review period will begin anew. If the state geologist has not received the missing or incomplete application information or fee within thirty (30) days after notification of the operator, the application will be considered null and void and the operator must reapply by submitting a new application for a permit to drill, deepen, plug-back, or recomplete, along with the associated fee.

(A) If the state geologist finds that the application is in good form, that all requirements of the application have been met, and that Chapter 259, RSMo, and implementing regulations are being met, the state geologist will issue the permit.

(B) If the state geologist determines either that the application is not in proper form, that the operator failed to submit the applicable fees, or that Chapter 259, RSMo, and implementing regulations are not being met, the permit will be denied.

(C) If the state geologist finds that the drilling of a well at the proposed site would be an undue risk to the surface or subsurface environment, the state geologist shall deny the permit.

(D) If the state geologist determines that the operator is in violation of any provision of Chapter 259, RSMo, or implementing regulations, the state geologist may deny the permit.

(7) Permits for drilling wells are not in any way transferable; however, any open well or the authority to inject for existing wells may be transferred to another operator according to 10 CSR 50-2.010(6).

(8) Permits to drill, deepen, plug-back, or recomplete a single well are valid for one (1) calendar year after date of approval. If the operator opts not to drill the well, a notice to cancel well permit application shall be submitted to the state geologist no later than thirty (30) calendar days following the end of the one- (1-) year permitted period.

(9) Prior to any change or modification of a permit, or any change in the operation of a well subject to these regulations, the operator shall notify the state geologist, identifying the well name, location, the proposed change, and a full explanation of the nature of the change. An appropriately revised permit application or application for permit for well recompletion along with the applicable fee pursuant to 10 CSR 50-1.050 shall be submitted to the state geologist for approval, except as provided in subsection (3)(C). No modification or change in operation may begin until the state geologist has reviewed and approved the revised application. The state geologist will review and respond to the notification within fifteen (15) business days. The review period will be suspended if additional information is necessary to effectively review the application. When the missing form or information is submitted by the operator and received by the state geologist, the fifteen (15) business day review period will begin anew.

(10) The well name and number entered on the permit application will be permanently assigned to the well and no changes will be approved to this information in the event of well or mineral interest transfers.

AUTHORITY: sections 259.060, 259.070, 259.080, and 259.140, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Dec. 12, 1975, effective Dec. 22, 1975. Amended: Filed Sept. 12, 1978, effective Feb. 1, 1979. Amended: Filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Dec. 15, 1986, effective April 11, 1987. Amended: Filed Sept. 15, 2006, effective April 30, 2007. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.060, RSMo 1965, amended 1972; 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015; 259.080, RSMo 1965, amended 1972, 2015; and 259.140, RSMo 1965.*

10 CSR 50-2.040 Drilling and Completion

PURPOSE: One of the important functions of the council is to prevent the contamination of the waters of the state. In Missouri, an underground source of drinking water may occur either above or below an oil and gas reservoir. This groundwater is commonly the only source of water for irrigation and animal and human consumption. This rule provides procedures for protecting all waters of the state and to create acceptable safety standards for wells and surface installations. Plugging of wells when they are abandoned is consistent with a statewide effort to prevent contamination of waters of the state and additionally is important in areas proven to be productive using enhanced recovery methods.

(1) During the drilling of any well, surface casing shall be set as follows, except as otherwise required or approved by the state geologist as indicated on the approved permit to drill, deepen, plug-back, or recomplete:

(A) Through all unconsolidated material plus twenty feet (20') into the underlying competent bedrock; or

(B) In areas where underground sources of drinking water are present above the production or injection zone(s), at a point at least fifty feet (50') below the base of the deepest known underground source of drinking water penetrated.

(2) All casing materials shall be steel or other material of equal or greater strength approved by the state geologist and able to withstand collapse and burst pressures that the well might encounter.

(3) All wells drilled shall be completed with tubing, packer, and a string(s) of casing which are properly cemented at sufficient depths to protect all water, oil, or gas bearing strata and prevents their contents from passing into other strata. For wells drilled to producing strata at a depth of no greater than one thousand five hundred feet (1500'), an operator may set a single casing string with no tubing or packer, if the well is cemented from the bottom of the casing to the surface to seal off and protect any underground source of drinking water. The state geologist may approve other methods of cementing casing in a well.

(4) Cement shall, except as otherwise modified or approved by the state geologist—

(A) Be used in setting all casing or sealing off producing strata, underground porosity gas storage strata, or underground sources of drinking water;

(B) Be installed from the bottom to the top of the casing in one (1) continuous operation using pressure grouting techniques;

(C) Be placed in a minimum one inch (1") annulus between strings of casing or the casing and borehole;

(D) Be maintained at surface level; and

(E) Be in place for at least eight (8) hours and reach a compressive strength of three hundred (300) pounds per square inch before the bottom plug is drilled or before tests are initiated, and before further operations begin.

(5) Multiple-completed wells. Operators may produce from more than one (1) pool through the same wellbore if separation of each pool is maintained and after application to, and approval by, the state geologist. Multiple-completed injection and production wells may be permitted if, in addition to the requirements above, all of the following conditions are met:

(A) Any offsetting production will not be adversely affected;

(B) Underground sources of drinking water will not be endangered;

(C) The well is continuously cemented across the injection and producing intervals; and

(D) The well demonstrates mechanical integrity.

(6) The state geologist may require specific casing and cementing requirements for injection wells based on the following:

(A) The depth of the underground source(s) of drinking water;

(B) The nature of the injected fluids; or

(C) The hydraulic relationship between the injection zone and the underground source(s) of drinking water.

(7) Each operator of a permitted injection well shall comply with the following requirements:

(A) Equip the wellhead with a pressure observation valve and maintain equipment necessary to obtain injection pressure measurements upon inspection by an authorized representative(s) of the state geologist. For injection wells completed prior to March 30, 2016, add the pressure observation valve prior to testing for mechanical integrity, or upon request of the state geologist;

(B) Tubing and packer requirements.

1. Each well permitted shall meet one (1) of the following requirements:

A. Equip the well to inject through tubing below a packer;

B. Set a packer run on the tubing in casing opposite a cemented interval at a point immediately above the uppermost perforation or openhole interval. Fill the annulus between the tubing and the casing with a corrosion-inhibiting fluid or hydrocarbon liquid. All wells using wellhead pressure to inject fluids must follow the tubing and packer requirements set in this subparagraph; or

C. Construct a packerless or tubingless completion for injection wells drilled to no greater than one thousand five hundred feet (1500') pursuant to paragraph (7)(B)2. or 3. of this regulation.

2. Injection through tubing without a packer is authorized if all of the following requirements are met:

A. Run the tubing to a depth not shallower than forty feet (40') above the uppermost perforation or open hole of the injection interval;

B. Equip each wellhead with a pressure observation valve on the tubing and the tubing-casing annulus; and

C. Maintain the well so that the mechanical integrity tests can be performed as specified in 10 CSR 50-2.055(12).

3. Injection without tubing is authorized if all of the following requirements are continuously met during the life of the well:

A. The casing is cemented continuously from setting depth to surface;

B. Surface wellhead injection pressure is recorded monthly and kept by the operator for five (5) years;

C. All pressure readings recorded are taken during actual injection operations; and

D. The operator of the tubingless completion maintains the well so that the mechanical integrity tests can be performed as specified in 10 CSR 50-2.055(12).

(8) In existing wells to be converted to other use, including but not limited to injection, all additional casing or recompletion shall be constructed as specified in sections (1) through (7).

(9) All points at which a well is in physical contact with a pool shall meet all minimum distance requirements as specified in 10 CSR 50. For horizontal wells, submit a directional survey with the well completion or recompletion report to verify points at which the well is in contact with the pool.

(10) Any well not constructed in compliance with requirements of this regulation shall be shut in, according to 10 CSR 50-2.060 until compliance is achieved.

(11) All stratigraphic test wells that are not converted to another type of well must be permanently plugged according to 10 CSR 50-2.060(3) within ninety (90) calendar days of the spud date. A single thirty (30) calendar day extension period may be granted upon written request to the state geologist. If conversion is to take place, submit a permit modification to the state geologist as detailed in 10 CSR 50-2.030(9) or 10 CSR 50-2.060(4) prior to conversion. The well will then be subject to all completion and location requirements for the type of well to which it is being converted.

(12) Permanent signage must be posted within ninety (90) calendar days of spud date at each well site indicating the well name, well number, and API number. Stratigraphic test wells and non-commercial gas wells are exempt from signage posting.

AUTHORITY: section 259.070, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Aug. 11, 1986, effective Oct. 27, 1986. Amended: Filed Sept. 16, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.050 Samples, Logs, and Completion Reports

PURPOSE: The objective of exploration is to locate reserves of oil and gas. To achieve this objective, the geologic history and the relationships of petroleum generation, migration, and accumulation must be understood. Analyses of well cuttings and cores provide much information on the composition, age, and original environment of deposition of the sediments and on fluid content and characteristics. Logging tools lowered into boreholes provide information concerning the electrical, acoustical, and radioactive properties of rock-fluid systems throughout drilled intervals. This rule provides for filing of these data with the state geologist for the future use of industry and government scientists and is of paramount importance in achieving new energy resources and for protection of the environment.

(1) Each operator drilling or recompleting

wells for the purpose of the exploration or production of oil or gas, excluding seismic shot holes, shall preserve and retain samples or drill cuttings, cores, and all other information as required under sections (2) and (3).

(2) Samples.

(A) The operator shall be given notice that samples or cores are required by a notice appended to or on a copy of the permit to drill, deepen, plug-back, or recomplete returned to the operator by the state geologist. All samples or drill cuttings saved in drilling or recompletion operations, and any cores taken, shall be retained by the operator for one hundred eighty (180) days after the spud date of the well.

(B) Sample cuttings shall be taken at five foot (5') intervals from the surface to total depth in all wells drilled under these regulations.

(C) During the drilling, or immediately following the completion, of any well drilled as provided in this rule, the operator shall advise the state geologist of all intervals that are to be cored, or have been cored, and, if requested, shall forward the core to the state geologist at the operator's expense. In the event that it is necessary for the operator to utilize all or any portion of the core to the extent that sufficiently large and representative samples are not available for the state, the operator shall provide the state geologist with the results of identification or testing procedures.

(D) Each sample shall be identified as to well name, location, and depth of sample. Upon request of the state geologist, all cores or core longitudinal sections not required by the operator for well evaluation purposes shall be placed in stratigraphic sequence in adequate boxes, labeled with the well name, location, and footage, and delivered to the state geologist. All samples shall be shipped at the operator's expense to the office of the state geologist and shall be for study and use.

(E) Delivery of the processed samples or cores shall be made within one hundred twenty (120) days of the spud date or date of commencement of recompletion of the well.

(F) If retention of the core is requested by the operator, designated state geologist staff members shall be provided unrestricted access to the core at the operator's facility during the operator's normal business hours. This access shall be subject to any confidentiality requests made under 10 CSR 50-1.020.

(G) Operators in physical possession of cores requested by the state geologist shall not dispose of the cores without permission of the state geologist.

(H) If the state geologist requests samples from portions of the hole that typically are not saved in drilling operations, the operator shall provide these samples.

(I) The state geologist may waive the requirements of sampling if the state geologist determines additional geologic information is not required. The state geologist will advise the operator on the returned copy of the approved permit to drill, deepen, plug-back, or recomplete when samples will not be required.

(3) Well completion or recompletion report.

(A) Within one hundred twenty (120) calendar days after the spud date or commencement of recompletion of a well drilled under these regulations, the operator shall submit a well completion or recompletion report on a form provided by the department. Stratigraphic test wells that have not been converted are exempt from this requirement.

(B) For good cause shown, an extension of sixty (60) days may be granted by the state geologist. The request for extension shall be submitted in writing and received before the expiration of the one hundred twenty- (120-) day period.

(C) If requested by the state geologist, the operator shall include with the report complete logs or records of the well, including, but not limited to, drilling time logs, electric logs, radioactive logs, or other logs that may have been obtained during mechanical integrity testing.

AUTHORITY: section 259.070, RSMo Supp. 2015. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.055 Injection Wells, Mechanical Integrity Testing, and Well Stimulation Treatment

PURPOSE: This rule provides for information needed for the permitting of injection activities and establishes procedures to be followed by the state geologist in issuing or denying permits. It also establishes procedures for determining injection pressures, demonstrating mechanical integrity, and taking corrective action at deficient wells. The rule further provides for notification of well stimulation treatment projects and submittal of documentation related to such treatment.

(1) Prior to commencement of injection operations, the following conditions shall be met:

(A) Application for a permit to inject along with the applicable fee pursuant to 10 CSR 50-1.050 has been submitted to the state geologist on forms provided by the department;

(B) The operator license, bond, and approved completion or recompletion report are on file in the office of the state geologist; and

(C) The state geologist has approved and issued a permit to inject granting the application.

(2) Each injection well found to be operating without a permit issued by the state geologist shall be shut in, according to 10 CSR 50-2.060 until compliance is achieved.

(3) Each application for permit to inject shall be submitted on a form provided by the department, along with the applicable fee pursuant to 10 CSR 50-1.050, completed in full, and accompanied by—

(A) A map that shows the area of review for the proposed injection well and all area of review wells of public record, within a one-half- (½-) mile radius of the injection well, that penetrate the injection interval, with each well uniquely marked or numbered;

(B) Descriptions of all wells that penetrate the injection interval in the area of review included on the permit application form;

(C) An electric log run to the surface or a log showing lithology or porosity of geologic strata encountered in the injection well, including an elevation reference. If such a log is unavailable, an electric log to surface or a log showing lithology or porosity of geological strata encountered in wells located within a one- (1-) mile radius of the subject well;

(D) A description of the fluid to be injected, the source of injected fluid, and compatibility of injected fluid with that of the receiving stratum, including total dissolved solid comparisons;

(E) An affidavit that notice has been provided in accordance with 10 CSR 50-2.055(4); and

(F) Information showing that injection into the proposed injection zone will be contained within the injection zone and will not initiate fractures through the overlying or underlying strata that could enable the fluid or formation fluid to enter underground sources of drinking water. This information includes the name, description, depth of overlying and underlying confining strata for the injection zone, and computed fracture gradients.

(4) Notice. The injection permit applicant

shall provide notice utilizing the following procedure:

(A) Notify each of the following parties whose acreage lies partially or fully within a one-half- (½-) mile radius of the project boundaries, by mailing or delivering a copy of the application and notice of intent on or before the date of publication described in subsection (4)(B) to:

1. Each operator or lessee of record;

2. Each owner of record of the mineral rights of unleased acreage; and

3. Each landowner within the project boundaries;

(B) Publish at least one (1) notice of intent to operate an injection well in a newspaper of general circulation in the county in which the proposed injection well(s) is located and include the following:

1. Name and address of applicant;

2. Location of well(s);

3. Geologic name of proposed injection strata and approximate depth of injection zone;

4. Proposed maximum injection rate and pressure;

5. Description of the need for the injection well(s);

6. Approximate maximum number of injection wells that ultimately will be utilized in the project; and

7. Address of the office of the state geologist, where comments may be sent or additional information may be obtained;

(C) Provide an affidavit of notice to include a copy of the newspaper publication and a list of parties notified according to subsection (4)(A); and

(D) A fifteen (15) calendar day written comment period begins on the date of publication. A record will be kept by the state geologist of all written comments received and the responses to these comments. If within this comment period the state geologist determines that a significant degree of public interest is expressed, or other factors indicate the need for a public hearing, the state geologist may order a hearing. Public notice of the hearing will be provided in a newspaper of general circulation in the county where the proposed injection well is located with a hearing date set for no sooner than thirty (30) calendar days after the date of notice. If no public hearing is ordered, the state geologist will process the application after the end of the fifteen (15) calendar day comment period and upon receipt of an affidavit of newspaper publication.

(5) Modifications.

(A) Modifications to the type or construction of the injection well including, but not limited to, an increase in injection rate or pressure or an additional perforation or injection zone, neither of which is expressly authorized by the existing permit, require an application for a permit to inject to be filed along with the applicable fee pursuant to 10 CSR 50-1.050, except as specified in subsection (5)(B) below.

(B) No fee will be assessed for an injection permit modification when the operator seeks to add or delete additional sources of the fluid disposed into the well but will not exceed the maximum authorized injection rate and pressure.

(C) Each application for any modifications to the injection permit, including increasing pressure or rate and changing or adding injection strata, requires the notice specified in section (4) of this regulation.

(6) Upon application for a permit to inject, the state geologist will review the application and, within fifteen (15) business days, determine if the application is in proper form and if the requirements of Chapter 259, RSMo, and implementing regulations are met. If the application is incomplete or lacking information, forms, or fees, the state geologist will notify the operator and suspend the application process. When the missing form, information, or fee is submitted by the operator and received by the state geologist, the fifteen (15) business day permit period will begin anew. If the state geologist has not received the missing or incomplete application information or fee within thirty (30) days after notification of the operator, the application will be considered null and void and the operator must reapply by submitting a new application for a permit to inject, along with the associated fee.

(A) If the state geologist finds that the application is in good form, that all requirements of the application have been met, and that Chapter 259, RSMo, and implementing regulations are being met, the state geologist will issue the permit.

(B) If the state geologist determines either that the application is not in proper form, that the operator failed to submit the applicable fees, or that Chapter 259, RSMo, and implementing regulations are not being met, the permit will be denied.

(C) If the state geologist finds that injection at the proposed site would be an undue risk to the surface or subsurface environment, the permit will be denied.

(D) If the state geologist determines that the operator is in violation of any provision of Chapter 259, RSMo, or implementing regulations, the state geologist may deny the permit.

(7) The state geologist may grant emergency authority to inject or dispose of fluids at an alternate location, if a facility is shut in for maintenance, testing, repairs, or by order of the state geologist or the council.

(8) A permit to inject shall not be transferred from one operator to another operator without approval of the state geologist. To transfer any permit to inject to a new operator (transferee), the current operator (transferor) submits a request, on a form provided by the department, to the state geologist no less than thirty (30) calendar days prior to the planned transfer. Any such request may be denied if the state geologist determines that the operator has not submitted all the necessary information. The transfer of a permit to inject will follow the transfer procedures prescribed in 10 CSR 50-2.010(6)(A) through (C).

(9) Injection pressures. A maximum injection pressure for injection wells will be established by the state geologist so that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the confining strata. The injection pressure also should not cause the injected fluid to migrate into an underground source of drinking water.

(A) The injection pressure determinations shall be approved by the state geologist based on one (1) of the following methods:

1. For injection of liquids, injection pressures at 0.75 psig/foot based upon the depth to the midpoint of the perforations or openhole interval in the injection zone; or

2. For injection of steam or other gases, injection pressures at 3.0 psig/foot based upon the depth to the midpoint of the perforations or openhole interval in the injection zone; or

3. Pump pressure data provided by the operator that details the ability of the injection zone to tolerate the requested pressure; or

4. Step-rate test data provided by the operator that details the ability of the injection zone to tolerate the requested pressure; or

5. Historical injection pressures provided by the operator and/or other data deemed appropriate by the state geologist to demonstrate an appropriate injection pressure.

(B) At least one (1) test must be performed within one thousand three hundred twenty feet (1320') of the proposed injection well, or as otherwise deemed appropriate by the state geologist. The data and interpretive report should be submitted in the format requested by the state geologist.

(C) Following approval by the state geologist of an initial maximum injection pressure, the well used to obtain the data in paragraph (9)(A)3. or 4. above may be used as a reference well. Additional injection wells within one thousand three hundred twenty feet (1320') of the reference well may be approved at the same maximum injection pressure.

(D) The established maximum injection pressure shall not be exceeded. Exceedance of the maximum injection pressure may result in additional compliance monitoring. Modifications to increase a maximum injection pressure for injection wells will be made according to section (5) above.

(10) Following receipt of an approved permit to inject, the operator shall notify the state geologist regarding injection operations as follows:

(A) Immediately upon the commencement of injection operations, notify the state geologist of the date of commencement; and

(B) After permanent discontinuance of injection operations, notify the state geologist, within ninety (90) calendar days, of the date of the discontinuance and the reasons for discontinuance.

(11) Monitoring. Following an initial mechanical integrity test in accordance with subsection (12)(A) below, once a month, the operator shall monitor and record, during actual injection, the pressure or fluid level in the annulus and any other information deemed necessary by the state geologist. An annual report of information logged will be submitted to the state geologist in accordance with 10 CSR 50-2.080.

(12) Mechanical integrity. All new or newly converted injection wells shall demonstrate mechanical integrity and meet the requirements of 10 CSR 50-2.090 and 10 CSR 50-2.100 before operation may begin and at least once every five (5) years. The date for the mechanical integrity test will be mutually agreed upon by the operator's representative and the state geologist, with a minimum of five (5) business days' notice prior to commencing the test.

(A) Demonstration of mechanical integrity shall utilize at least one (1) of the following procedures:

1. Pressure test. Conduct a pressure test in the annulus above the packer, or the injection casing in wells not equipped with a packer, in the following manner:

A. For newly completed or newly converted wells, the casing may be tested before perforating. Apply a fluid pressure of one hundred ten percent (110%) of the approved pressure, but no less than three hundred (300) psig. A well demonstrates mechanical integrity if, when pressurized, it does not lose more than ten percent (10%) of the tested pressure over a period of thirty (30) minutes;

B. Pressure test wells constructed with tubing and a packer by applying a fluid pressure of one hundred ten percent (110%) of the approved pressure, but no less than three hundred (300) psig. A well demonstrates mechanical integrity if, when pressurized, it does not lose more than ten percent (10%) of the tested pressure over a period of thirty (30) minutes;

C. For wells constructed with tubing and no packer, set a retrievable plug or packer immediately above the uppermost perforation or openhole interval. Apply a fluid pressure of one hundred ten percent (110%) of the approved pressure, but no less than three hundred (300) psig. A well demonstrates mechanical integrity if, when pressurized, it does not lose more than ten percent (10%) of the tested pressure over a period of thirty (30) minutes; and

D. For wells constructed with tubing and no packer, a method of pressure testing known as fluid depression may be conducted with prior approval and under guidelines established by the state geologist. Depress the fluid in the well with gas pressure to a point in the wellbore immediately above the perforations or openhole interval. The minimum calculated pressure necessary to depress the fluid in the wellbore shall be no less than fifty (50) psig. A well demonstrates mechanical integrity if, when pressurized, it does not lose more than ten percent (10%) of the tested pressure over a period of thirty (30) minutes;

2. Alternative tests. With prior approval by the state geologist, alternative test methods including, but not limited to, temperature surveys, tracer surveys, or noise logs, may be used to demonstrate mechanical integrity if conditions are appropriate.

(B) Results of this test and an interpretive report must be submitted on the appropriate form to the state geologist within thirty (30) calendar days of completion of the test. The state geologist will inform the operator of a satisfactory or unsatisfactory demonstration of mechanical integrity within fifteen (15) business days.

(13) If a well cannot demonstrate mechanical integrity, or if other conditions develop that threaten or could threaten the quality of surface or groundwater, the operator shall cease operation of the well, notify the state geologist within twenty-four (24) hours with details as to the nature of the problem, and propose a corrective action plan in writing within five (5) business days. The operator shall have no more than sixty (60) calendar days from the date of initial failure in which to perform one (1) of the following:

(A) Repair and retest the well to demonstrate mechanical integrity; or

(B) Plug the well.

(14) Following corrective action performed pursuant to section (13), the state geologist may require additional testing or monitoring. If the state geologist has approved the use of any chemical sealant or other mechanical device to isolate the leak before use, then the following requirements apply:

(A) Injection pressure into the well does not exceed the maximum mechanical integrity test pressure; and

(B) The well demonstrates mechanical integrity on an annual basis for the duration the well is completed in this manner.

(15) The state geologist or an authorized representative may sample injected fluids at any time during injection operations.

(16) Well stimulation treatment projects. At least five (5) business days prior to commencement of a well stimulation treatment project, the operator is required to notify the state geologist in writing the nature of the project. Within thirty (30) calendar days after completion of a well stimulation treatment project, the operator shall submit copies of the well stimulation treatment tickets from the company performing such treatment, including documentation of the materials injected.

(17) All injection wells in operation prior to March 30, 2016, shall comply with these injection permitting requirements no later than April 1, 2017. All wells permitted on or after March 30, 2016, shall comply with requirements in this rule prior to permit issuance.

AUTHORITY: sections 259.060, 259.070, 259.080, and 259.140, RSMo 2016. Original rule filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.060, RSMo 1965, amended 1972; 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015; 259.080, RSMo 1965, amended 1972, 2015; and 259.140, RSMo 1965.*

10 CSR 50-2.060 Shut-in Wells, Plugging, and Conversion to Water Well

PURPOSE: This rule provides for the protection of both surface water and groundwater. Drilling muds, oil, and water recovered from drilling or testing operations should be disposed of so that pollution of surface soil, ponds, and streams is avoided. Underground sources of drinking water strata are protected by casing set below the deepest strata penetrated that might contain underground sources of drinking water. Dry holes should be plugged in a manner that subsurface salt water or mineralized water will be confined to the stratum in which it occurs. Similarly, each oil or gas stratum penetrated by a well should be permanently sealed when abandoned to prevent contamination of underground sources of drinking water and also to prevent damage by water of any oil or gas stratum capable of producing in paying quantities. In certain logging procedures, a radioactive source (in a probe or sonde) is lowered into the borehole to provide certain subsurface data useful in exploration for oil and gas. Should this radioactive source contained in a logging tool be lost in the hole, certain procedures are prescribed to prevent the accidental or intentional mechanical disintegration of the radioactive source. Further, there are provisions for marking the well site permanently as a warning that a radioactive source has been abandoned in the well.

(1) Shut-in wells.

(A) Shut-in status. A well is considered shut in whenever it has not been operated for ninety (90) calendar days or more. The shut-in status shall not exceed ninety (90) calendar days. Prior to the expiration of the ninety (90) calendar days shut-in status, the operator of that well shall perform one (1) of the following:

1. Return the well to operation and notify the state geologist on the monthly well status report per 10 CSR 50-2.080(2); or

2. Plug the well; or

3. Petition the state geologist for an extension and propose an end date for the shut-in status.

(B) Approval of shut-in status extensions.

1. The state geologist may approve an extension of a well's shut-in status not to exceed one (1) year. If the operation of any shut-in well is not resumed within one (1) year after the extension has been approved, the well will be deemed abandoned, and the operator shall plug the well per these rules. Upon application to the state geologist before the expiration of the one- (1-) year period, and for good cause shown, the period may be extended by the state geologist for one (1) year upon compliance with the provisions of paragraph (1)(B)2. of this section. Additional one- (1-) year extensions may be granted by the state geologist. The total time of such consecutive extensions shall not exceed ten (10) years.

2. Any well in continuous shut-in status must demonstrate mechanical integrity at least once every five (5) years pursuant to procedures in 10 CSR 50-2.055.

(C) Right of denial. Any shut-in well may be inspected by the state geologist to determine whether its shut-in status could cause contamination of underground sources of drinking water. If necessary, the state geologist may deny extensions of shut-in status for a well and require the well be plugged, repaired, or demonstrate mechanical integrity in accordance with these regulations.

(D) Plugging of shut-in wells. If the well is not returned to service or properly plugged pursuant to these rules before the end of the shut-in status, the well will be considered abandoned and shall be plugged within thirty (30) calendar days. After the thirty- (30-) day period, if the well has not been plugged pursuant to these rules, the bond in place for the well shall be forfeited and deposited into the Oil and Gas Remedial Fund according to 10 CSR 50-2.020(6) and utilized according to 10 CSR 50-2.060(3)(F).

(2) Shut-off test. Whenever it appears to the state geologist that any water from any well is migrating or infiltrating into oil-bearing or gas-bearing strata or that any detrimental substances are infiltrating any underground sources of drinking water, the state geologist may require a shut-off test, to be conducted at the expense of the operator of that well. The time and procedure for the taking of the test will be fixed by the state geologist. Reasonable notice of the test will be given to the owner or operator. The owner or operator of any abandoned oil or gas well from which water is migrating or infiltrating into any oil-bearing or gas-bearing strata, or from which any detrimental substances are infiltrating any underground sources of drinking water, shall immediately plug or repair the well in accordance with section (3) below and shall prevent the infiltration of oil, gas, produced water, or other detrimental substances into underground sources of drinking water strata.

(3) Plugging Requirements.

(A) Abandoned Wells.

1. An abandoned well shall be plugged or addressed as directed by the state geologist as provided in these rules. Plugging an abandoned well includes the removal of any rig, derrick, or other operating structure, and all abutments and appurtenances used in the operation of such well, from the land upon which the well was operated, and includes grading the surface of the soil in such manner as to leave the land, as nearly as practicable, in the same condition after the removal of such structures, equipment, and appurtenances as it was before such structures and abutments were placed thereon, unless the owner of the land and the plugging party have entered into an agreement providing otherwise.

2. When the state geologist investigates and determines that a well has been abandoned, as provided in these rules, the state geologist may issue an order directing the operator, owner, or any person who without authorization tampers with or removes surface equipment or downhole equipment from the abandoned well to plug the well as directed by the state geologist. If the person to whom the order is issued fails to comply with any such order that has become final under 10 CSR 50-1.040, the person to whom the order is issued shall be deemed to have abandoned any and all property interests in the well and any rig, derrick, or other operating structure, and all abutments and appurtenances.

3. In addition to any other remedy provided in Chapter 259, RSMo, or implementing regulations, if the state geologist determines that a well has been abandoned, the department or the council may request that the attorney general institute a civil proceeding to request appropriate injunctive relief, civil penalties, or other appropriate remedy, as provided in sections 259.200 and 259.210, RSMo.

4. If the state geologist determines that a well has been abandoned, the department in accordance with section 259.070.5(7), RSMo, may plug such well, or cause it to be plugged as to prevent contamination or danger of contamination of any waters of the state or loss of underground sources of drinking water, and may remediate contamination from the well. Plugging or remediation may include the collection, removal, salvage, and disposition of abandoned operating structures or other equipment. The cost of the plugging or remediation will be paid by the Oil and Gas Remedial Fund, as provided in section 259.190, RSMo.

(B) Notice.

1. Before plugging any well the operator shall file with the state geologist a notice of intent to plug on a form provided by the department. The notice will include the details of the proposed plugging procedure and description of any logging tool containing a radioactive source being abandoned (see

subsection (E) of this section for radioactive source abandonment procedure). The proposed plugging procedure shall be approved by the state geologist prior to commencement of plugging activities.

2. The operator shall notify the state geologist no later than five (5) business days before the plugging.

3. Exceptions.

A. If necessary to avoid rig downtime, oral permission to plug dry holes may be obtained by informing the state geologist of proposed plugging procedures, in which case a notice of intent to plug form must be submitted within three (3) business days of plugging.

B. In lieu of prior notice and approval by the state geologist as detailed in paragraph (3)(B)1. of this rule, the operator may elect to plug a well from total depth to the surface with cement slurry, being no less than fifteen (15) pounds per gallon density, emplaced via a tremie pipe.

C. If an emergency situation exists, the operator shall orally notify and present the plugging proposal to the state geologist for approval.

(C) Plugging methods.

1. Before any well is considered plugged, all oil, gas, and water shall be permanently confined in the separate strata originally containing them.

2. Plug wells by emplacing cement via a tremie pipe from twenty-five feet (25') below the bottom of the stratum to a point no less than twenty-five feet (25') above the top of the stratum that contains oil or gas, or from which oil or gas has been produced, or that has been used for injection.

3. Cut off casing in plugged wells, including horizontal wells, at least three feet (3') below ground surface at the wellhead.

4. Horizontal wells. Fill each horizontal well with a cement plug from total depth of the deepest producing horizon to the surface.

5. Stratigraphic test wells. Fill each stratigraphic test well with a cement plug from total depth to within three feet (3') of the surface. All stratigraphic test wells shall be plugged after being used as soon as is reasonably practicable but no later than thirty (30) calendar days after the drilling of the well.

6. Seismic shot holes. Plug all seismic shot holes upon completion of the shooting. Such holes shall not remain unplugged for a period of more than thirty (30) calendar days after the drilling of the hole.

7. If circulation is lost in the drilling of any hole and circulation cannot be regained, place a cement plug above the zone of lost circulation to the surface.

8. Alternative plugging methods may be authorized by the state geologist when geologic conditions or conditions in the casing or wellbore warrant.

(D) Reporting. The operator shall submit a plugging record completed in full on a form provided by the department along with the applicable fee pursuant to 10 CSR 50-1.050 to the state geologist within thirty (30) calendar days after completion of plugging activities.

(E) Radioactive source.

1. If a radioactive source cannot be retrieved from a hole and is proposed to be abandoned in the well, the operator shall notify the state geologist. Wells in which radioactive sources are being abandoned shall be mechanically equipped so as to prevent the accidental or intentional mechanical disintegration of the radioactive source.

A. Sources being abandoned in a well shall be covered with no less than a fifty foot (50') standard-red-dyed cement plug with a whipstock set on top of the plug. The dye is to alert the re-entry operator prior to encountering the source.

B. In wells where a radioactive logging source has been cemented in place behind a casing string and above total depth, upon abandonment a standard-red-dyed cement plug should be placed opposite the abandoned source and extend fifty feet (50') above and fifty feet (50') below with a whipstock placed on top of the plug.

C. If the operator finds after expending a reasonable effort it is not possible to abandon the source as prescribed in subparagraph (3)(E)1.A. or B. of this rule, the operator shall seek the state geologist's approval to cease efforts in this direction and obtain approval for an alternate abandonment procedure.

2. Upon permanent plugging of any well in which a radioactive source is abandoned, and after removal of the wellhead, a permanent plaque is to be attached to the top of the casing left in the hole in a manner that reentry cannot be accomplished without disturbing the plaque. This plaque would serve as a visual warning to any person re-entering the hole that a radioactive source has been abandoned in place in the well. The plaque should contain the trefoil radiation symbol with a radioactive warning and should be constructed of a long-lasting material such as monel, stainless steel, or brass.

(F) Monies deposited in the Oil and Gas Remedial Fund may be used by the department to plug those oil, gas, and injection wells that have been abandoned and have not been plugged according to these rules, subject to the following guidelines:

1. Wells covered by a forfeited bond will receive first priority; and

2. Other wells will receive secondary priority on the basis of their potential for groundwater contamination or other damage in the order recommended by the state geologist.

(4) Conversion to domestic water supply well. Within thirty (30) calendar days after conversion of a well to a domestic water supply well, submit an application on a form provided by the department. The well must have been reconstructed, or, for a stratigraphic test well, have been constructed, as a water well by a Missouri permitted water well installation contractor and meet minimum water well construction standards as set forth in the Water Well Drillers' Act, Chapter 256, RSMo, and the implementing Missouri Well Construction rules 10 CSR 23. A well registration or certification, as appropriate, per those rules shall be approved before the state geologist will approve the conversion agreement and release the applicable bond.

AUTHORITY: sections 259.070 and 259.190, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Dec. 12, 1975, effective Dec. 22, 1975. Amended: Filed Sept. 10, 1979, effective Feb. 11, 1980. Amended: Filed Oct. 14, 1981, effective Feb. 1, 1982. Amended: Filed Sept. 13, 1983, effective Dec. 11, 1983. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015 and 259.190, RSMo 1965, amended 1983, 2015.*

10 CSR 50-2.065 Operations

PURPOSE: This rule provides for procedures or requirements for activities as part of oil and gas production operations. General operations include hydrocarbon storage, metering of produced gas, and spill response.

(1) Tank identification. All oil tanks, tank batteries, tanks used for produced water collection or disposal, and tanks used for oil-sediment treatment or storage shall be identified by a sign posted on, or not more than fifty feet (50') from, the tank or tank battery. Within ninety (90) days of any transfer, the transferee shall change the tank battery identification sign to include the new operator information. The sign shall—

(A) Identify name, license number, and contact information of the operator;

(B) Identify name of the lease or unit being served by the tank;

(C) Identify location of the tank, including section, township, range, and county;

(D) Identify contents of the tank;

(E) Be of durable construction; and

(F) Be large enough to be legible under normal conditions at a distance of fifty feet (50').

(2) Spill Notification. Each operator, immediately upon discovery or knowledge of any spill or release, will take immediate action in accordance with the Spill Bill, section 260.500 to 260.550, RSMo, and the implementing regulations in 10 CSR 24. This does not alter responsible parties' obligations under any other applicable law.

AUTHORITY: section 259.060 and 259.070, RSMo 2016. Original rule filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.060, RSMo 1965, amended 1972 and 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.070 Well Spacing
(Rescinded March 30, 2016)

AUTHORITY: sections 259.060, 259.070, and 259.100, RSMo 1986. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 12, 1978, effective Feb. 1, 1979. Amended: Filed Dec. 15, 1986, effective April 11, 1987. Amended: Filed May 18, 1987, effective July 24, 1987. Rescinded: Filed Sept. 15, 2015, effective March 30, 2016.

10 CSR 50-2.080 Record Retention and Reporting

PURPOSE: A history of the production of an oil or gas well is important in the evaluation of a particular well or pool. Reservoir characteristics, fluid behavior, and production can be used for studies and estimates of production on future pools. Use of production data and reservoir analyses included on monthly reports can be correlated with recovery techniques to promote conservation and to prevent waste in the oil industry. This rule provides for the filing of monthly status, production, and water disposal reports, with certain waivers.

(1) Record Retention.

(A) For all wells, each operator shall maintain legible documentation of the cementing operations across all strata and provide this documentation to the state geologist upon request. The documentation may consist of invoices, job logs, job descriptions, or other similar service company reports.

(B) Each operator of an injection well shall keep current, accurate, and legible records of the amount and kind of fluid injected into the injection well and preserve these records for five (5) years.

(C) Each operator of an observation well shall keep current, accurate, and legible records of the data collected and preserve these records for five (5) years.

(2) Monthly Reporting. Each operator shall prepare in full the following monthly reports on a form provided by the department and submit to the state geologist no later than forty-five (45) calendar days after the end of each calendar month:

(A) Well status of each open well in a unit;

(B) Well production, which may be presented for each unit unless requested otherwise by the state geologist or the council;

(C) Disposal of produced water, including the amount, type, and method of disposal of all fluids produced from oil wells, gas wells, or underground gas storage reservoirs; and

(D) The monthly gas well status and production reports may be waived by the state geologist upon application by the operator of the well when production from the well is for the owner's sole and non-commercial use.

(3) Annual reporting. Each operator shall submit an annual report completed in full on a form provided by the department for the following:

(A) An annual injection well monitoring report for the previous calendar year, submitted to the state geologist on or before March 1 of the following year;

(B) A complete inventory report of all open wells as of December 31, submitted to the state geologist on or before January 31; and

(C) An annual financial assurance report providing documentation of sufficient financial assurance for all open wells, pursuant to Chapter 259, RSMo, and implementing regulations, submitted to the state geologist on or before January 31 of each year and including a signed and notarized statement from any applicable surety or issuer of a letter of credit or certificate of deposit documenting that the referenced instruments are valid and in full force.

(4) All monthly and annual reports will be on file at the office of the state geologist and will be retained and available for at least five (5) years.

AUTHORITY: section 259.070, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Dec. 12, 1975, effective Dec. 22, 1975. Amended: Filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.090 Disposal of Fluids by Injection

PURPOSE: In some phases of the producing life of some reservoirs, large quantities of formation water may be produced along with the oil and gas. Adequate protection of underground sources of drinking water lies in the proper disposal of this produced water. Rather than allowing the produced water to flow onto the land surface and into streams and rivers, a more satisfactory method of disposal is to inject this water into permeable subsurface strata that do not contain underground sources of drinking water. This rule provides details such as quality and quantity of the water and well construction that are to be submitted to the state geologist for approval prior to such injection to ensure that underground sources of drinking water are adequately protected.

(1) Other than within the original production strata, disposal of produced fluid from an oil or gas operation is prohibited into an oil or gas reservoir, a potential oil or gas reservoir, or an underground source of drinking water unless that drinking water source has been exempted, or unless otherwise approved by the state geologist.

(2) An injection well for the disposal of fluids must be located a minimum of one hundred sixty-five feet (165') from a unit boundary.

AUTHORITY: section 259.070, RSMo 2016. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Sept. 15, 2015, effective March 30, 2016. Amended: Filed June 27, 2018, effective Feb. 28, 2019.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.100 Enhanced Recovery Projects

PURPOSE: Enhanced recovery projects utilize fluids, including but not limited to, produced water, steam, or natural gas, by injection into an oil reservoir to recover additional oil. Where the oil is difficult to recover with water or steam, certain chemicals are often added to increase the efficiency of water as an oil-recovery agent. These enhanced recovery methods help maintain reservoir pressure and increase the ultimate amount of oil that can be obtained from a particular pool, thereby preventing the waste of natural resources. This rule provides for the protection of groundwater by requiring approval by the state geologist of certain details of the enhanced recovery project. In addition, this rule protects the correlative rights of the offset property owners by requiring the state geologist's approval of well spacing and production unit line requirements prior to the commencement of operations.

Enhanced recovery projects designed for the secondary or tertiary recovery of oil or gas may be approved as part of a proposed production unit. Production unit approval may be requested by submitting to the state geologist an application specifying all pertinent details of the proposed project as detailed in 10 CSR 50-3.020(2).

AUTHORITY: section 259.070, RSMo Supp. 2015. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

10 CSR 50-2.110 Special Projects and Research Projects
(Rescinded March 30, 2016)

AUTHORITY: sections 259.060 and 259.070, RSMo 1986. Original rule filed Oct. 11, 1966, effective Oct. 21, 1966. Amended: Filed Sept. 12, 1973, effective Sept. 22, 1973. Rescinded: Filed Sept. 15, 2015, effective March 30, 2016.

10 CSR 50-2.120 Gas Storage Operations

PURPOSE: The development of gas storage operations requires that they be addressed by the state. This rule will ensure protection of underground sources of drinking water.

(1) Gas storage operations that inject gas that is liquid at standard temperature and pressure to be recovered at a later date for use shall comply with all rules pertaining to injection wells, except that such wells may not be drilled closer than approximately three hundred thirty feet (330') from the boundary of the gas storage operation.

AUTHORITY: section 259.070, RSMo Supp. 2015. Original rule filed Oct. 14, 1981, effective Feb. 11, 1982. Amended: Filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

Rules of
Department of Natural Resources
Division 50—Oil and Gas Council
Chapter 3—Well Spacing for Oil and Gas Pools

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 50—Oil and Gas Council
Chapter 3—Well Spacing for Oil and Gas Pools

10 CSR 50-3.010 Spacing Units for Primary Production

PURPOSE: Spacing patterns for wells in a pool or reservoir are established by this rule to prevent waste, to avoid the drilling of unnecessary wells, to contribute to orderly development, and to protect correlative rights. Wells should be located in a relatively uniform spacing pattern even under diversified ownership conditions to protect correlative rights along property lines. Optimum spacing is considered to be the maximum number of reservoir acres that can be economically and efficiently drained by one (1) well within a reasonable time. For example, if one (1) well can be drilled economically on ten (10) acres and this is the area that can be drained efficiently, then the spacing or acreage attributable to the well should not be less than ten (10) acres. A well so spaced will ultimately recover as much oil for the ten (10) acres as would be recovered by more than one (1) well, thereby avoiding the drilling of unnecessary wells. This rule provides requirements for, and limitations on, the spacing of wells and for certain exceptions and exemptions thereto.

(1) All wells for the primary production of oil and gas drilled into the same pool, except as explicitly exempted by this rule, shall be subject to spacing units as follows:

(A) Oil wells. Not more than one (1) oil well shall be drilled upon any tract of land into the same pool as specified in the following:

1. A standard spacing unit shall be ten (10) acres. The well shall not be located closer than three hundred thirty feet (330') to any unit line, nor closer than six hundred sixty feet (660') to the nearest oil well completed in or capable of producing from the same pool. Except as provided in paragraph (1)(A)2., no oil well shall be drilled on less than ten (10) acres except by order of the state geologist; or

2. Due to the low natural reservoir pressure at shallow depths, oil may be drained economically and efficiently through primary production only by using smaller spacing units. A standard spacing unit for an oil well drilled to a total depth of less than one thousand five hundred feet (1500') shall be two and one-half (2.5) acres or three hundred thirty feet (330') from an oil well completed in or producing from the same pool and shall not be drilled nearer than one hundred sixty-five feet (165') from any unit line. No oil well shall be drilled on less than two and one-half (2.5) acres except by order of the state geologist; and

(B) Gas wells. Not more than one (1) gas well shall be drilled upon any tract of land into the same pool as specified in the following:

1. A standard spacing unit shall be a forty (40) acres. The gas well shall not be located closer than six hundred sixty feet (660') to any unit line, nor closer than one thousand three hundred twenty feet (1320') to the nearest gas well completed in or producing from the same pool. Except as provided in paragraph (1)(B)2., no gas well shall be drilled on less than forty (40) acres except by order of the state geologist; or

2. Due to the low natural reservoir pressure at shallow depths, gas may be drained economically and efficiently through primary production only by using smaller spacing units. A standard spacing unit for a gas well drilled to a total depth of less than one thousand five hundred feet (1500') shall be ten (10) acres or six hundred sixty feet (660') from a gas well completed in or producing from the same pool and shall not be drilled nearer than three hundred thirty feet (330') from any unit line. No gas well shall be drilled on less than ten (10) acres except by order of the state geologist.

(C) An operator may petition the state geologist to issue an order to establish spacing units of a specified and approximate uniform size and shape for a pool for the purpose of preventing waste, avoiding the drilling of unnecessary wells, or protecting correlative rights. The state geologist may modify an order establishing spacing units to alter the size and shape of one (1) or more existing spacing units for the purpose of preventing waste, avoiding the drilling of unnecessary wells, or protecting correlative rights.

(2) Only one (1) well that is in physical contact with the pool and capable of producing oil or gas or both is allowed in any given spacing unit.

(A) The state geologist, on an individual basis, may grant the drilling and production of one (1) or more increased density wells within a spacing unit, provided that the operator submits convincing technical evidence that the existing well(s) is not capable of efficiently draining the pool or portion thereof that resides within the confines of the spacing unit.

(B) The surface locations of all wells and all the points at which the wells are in physical contact with the pool shall occur no closer than a specified distance from the vertical boundary of a spacing unit, and this minimum distance is set in section (1) or in any order issued pursuant to subsection (1)(C). The state geologist, on an individual basis, subsequently may issue an order granting a location exception where the surface location of a well, or its contacts with the pool, or both, may be located closer than the specified minimum distance from the boundary of the spacing unit.

(C) Any injection well and any surface or subsurface device that redirects the natural movement of oil, gas, or formation water in a pool is prohibited at any location within spacing units under primary production, and the drainage of oil, gas, and formation water into the well must be allowed to occur naturally. All injection projects or other enhanced recovery of oil or gas must be done in accordance with 10 CSR 50-3.020.

(D) Compressors that lower pressure inside wells for the purpose of increasing the ultimate recovery of gas may be used in spacing units. Compressors shall not induce a vacuum inside wells unless approved by the state geologist.

(3) The following are exempt from the requirements of spacing units:

(A) Offset wells that were drilled prior to the enactment of Chapter 259, RSMo, upon application to the state geologist and to protect against offset drainage;

(B) Any well that is drilled for enhanced recovery as part of the operation of a production unit, in accordance with 10 CSR 50-3.020;

(C) Wells whose purpose is for the disposal of produced water, non-usable gas, or other liquid or gaseous waste resulting from the production of oil, gas, or both;

(D) Stratigraphic test wells;

(E) Wells drilled expressly for operation of underground gas storage projects; and

(F) Non-commercial gas wells, if approved by the state geologist under the following conditions:

1. An operator may apply for the establishment of a spacing unit, consisting of one (1) or more contiguous separately owned tracts, on which a well no deeper than eight hundred feet (800') may be drilled without regard to section lines or property lines, provided that any well so allowed shall not be drilled closer than one hundred sixty-five feet (165') from the boundary of the spacing unit, unless approved by the state geologist;

2. An applicant for an exemption and establishment of a spacing unit under this subsection shall submit a well location map, as described in 10 CSR 50-2.030(3), outlining

the area that will be affected by the proposed well and showing the location of the separate tracts, the names and addresses of landowners of the separate tracts, and the names and addresses of lessees of any tracts leased for oil, gas, or both. All wells, including but not limited to, dry, abandoned, producing, or shut-in wells on the proposed unit, and any well location for which drilling permits have been approved, shall be located accurately and designated on the map; and

3. Spacing exemptions may be granted upon application to the state geologist.

AUTHORITY: section 259.100, RSMo Supp. 2015, and section 259.120, RSMo 2000. Original rule filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.100, RSMo 1965, amended 1987, 2015 and 259.120, RSMo 1965, amended 1972.*

10 CSR 50-3.020 Production Units and Well Spacing for Enhanced Recovery

PURPOSE: Production units are small- to large-scale projects designed to maximize ultimate recovery of oil and gas from the entirety of a single pool or particular portion thereof through enhanced recovery. Enhanced recovery typically involves the use of injection wells.

(1) No well, including, but not limited to, those used for production or injection, drilled within a production unit shall be drilled nearer than one hundred sixty-five feet (165') from the production unit boundary. Stratigraphic test wells are exempt from this requirement.

(2) An operator may submit to the state geologist an application for the implementation of a production unit of a specified size and shape, with a well configuration of a certain nature of operation, for the purpose of an enhanced recovery project designed to maximize the ultimate recovery of oil or gas or both from the entirety of a single pool or particular portion thereof. The state geologist may approve the application if the proposed production unit is operated by a single operator or owner. If the proposed production unit includes more than one (1) operator or owner, application shall be made to the council, according to procedures in 10 CSR 50-4.020. Any applicant for a production unit shall provide a description of the proposed production unit area, including the following information:

(A) Maps that show the unit boundary, cultural and natural surface features, areal extent of the pool, depth and thickness of the pool, location of any and all prior wells regardless of kind in the proposed unit area and those that occur within a one-half (1/2) mile-wide buffer area around the proposed unit;

(B) Location of all owner tracts;

(C) Location and pattern of all proposed production, injection, water supply and disposal wells that are to be drilled and operated for purpose of the proposed production unit; and

(D) Location of all surface facilities associated with the proposed production unit.

AUTHORITY: section 259.100, RSMo Supp. 2015, and section 259.120, RSMo 2000. Original rule filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.100, RSMo 1965, amended 1987, 2015 and 259.120, RSMo 1965, amended 1972.*

Rules of
Department of Natural Resources
Division 50—Oil and Gas Council
Chapter 4—Authorization of Pooling Units and Unitization Agreements for Oil and Gas Pools

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 50—Oil and Gas Council
Chapter 4—Authorization of Pooling Units and Unitization Agreements for Oil and Gas Pools

10 CSR 50-4.010 Application for Authorization of a Pooling Unit for Primary Production

PURPOSE: This rule sets forth the procedure for pooling mineral interests of separately-owned tracts, portions of tracts, or interests within a single spacing unit for primary production, to allow for the development and operations of the spacing unit.

(1) Before the commencement of drilling a well in a spacing unit, all owners, whether ownership is by deed or lease or farmout, shall enter into a contractual agreement whereby every owner pays his or her mutually agreed fair share of the drilling and operating costs and receives his or her fair share of the oil or gas or the profits produced therefrom. Contractual agreement is achieved by way of the pooling process pursuant to section 259.110, RSMo. The pooling process may be either voluntary or involuntary, as defined as follows:

(A) A voluntary pooling occurs when all owners of mineral interests enter into a private contractual agreement willingly and of their own accord. Voluntary poolings are executed privately with no involvement by the council; and

(B) An involuntary pooling occurs when one (1) or more owners of mineral interests are not able to enter into a private contractual agreement willingly and of their own accord, and the council, upon application by any interested owner and after notice and hearing, issues a pooling order that serves as the binding contractual agreement.

AUTHORITY: sections 259.110 and 259.120, RSMo 2000. Original rule filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.110, RSMo 1965 and 259.120, RSMo 1965, amended 1972.*

10 CSR 50-4.020 Application for Authorization of Unitization for Enhanced Recovery

PURPOSE: This rule sets forth a procedure for small- to large-scale cooperative development and operation projects that are designed to maximize ultimate recovery of oil and gas from the entirety of a single pool or particular portion thereof through the use of enhanced recovery projects within production units. Similar to the pooling process for primary production, unitization of production units for enhanced recovery involves contractual agreements between different owners and/or operators of existing producing wells, and a decision as to which one (1) of the operators will operate the production unit as a whole.

(1) The council, upon the written request of an applicant and upon receipt of the information specified in section (2) of this rule and after notice and hearing, may approve the implementation of a production unit of a specified size and shape, and a well configuration of a certain nature of operation, for the purpose of a cooperative development and operation project designed to maximize the ultimate recovery of oil or gas or both from the entirety of a single pool or particular portion thereof. All operators and owners in the proposed production unit shall enter into contractual agreement such that one (1) party is designated the operator of the production unit as a whole, and every owner pays his or her mutually agreed fair share of the drilling and operating costs and receives his or her fair share of the oil, gas, or both produced from the unit, or the profits derived from such production. Contractual agreement is achieved by way of the unitization process, which is either voluntary or involuntary as defined as follows:

(A) A voluntary unitization occurs when all operators and owners in the proposed production unit area are able to enter into a private contractual agreement willingly and of their own accord; and

(B) An involuntary unitization occurs when one (1) or more operators or owners are not able to enter into a private contractual agreement willingly and of their own accord, and the council, upon application by any person or party representing the voluntarily agreed production unit proponents that collectively hold at least seventy-five percent (75%) of the right to drill into and to produce oil and gas from the pool and at least seventy-five percent (75%) of all mineral interest and after notice and hearing, may approve the implementation of the production unit and issue a unitization order that serves as a binding contractual agreement for all parties and that, if necessary, designates the operator of the production unit as a whole.

(2) Any applicant for a production unit for the purpose of a cooperative development and operation project for enhanced recovery shall provide the following information to the council thirty (30) calendar days prior to the date of hearing:

(A) A description of the proposed production unit area, as specified in 10 CSR 50-3.020(2);

(B) A detailed description of the exact nature of the proposed unit operations; and

(C) Conformed copies of the applicable agreements, which may be composites of the executed counterparts.

AUTHORITY: sections 259.110 and 259.120, RSMo 2000. Original rule filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.110, RSMo 1965 and 259.120, RSMo 1965, amended 1972.*

Rules of
Department of Natural Resources
Division 50—Oil and Gas Council
Chapter 5—Special Projects and Research Projects

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 50—Oil and Gas Council
Chapter 5—Special Projects and Research Projects

10 CSR 50-5.010 Special Projects and Research Projects

PURPOSE: The oil and gas reserves of the state at any one (1) time consist of that fraction of discovered oil and gas that can be economically recovered using existing technology. Since optimum recovery is dependent upon engineering and scientific achievements as well as economics, any development of new processes represents an increase in oil and gas reserves as well as an improvement in oil and gas conservation practices. By carefully matching recovery processes to individual reservoirs, it should be possible to greatly extend the potential that exists in unconventional oil and gas deposits of Missouri. This rule permits the state geologist and the council to give special consideration to development of potential resources such as these.

(1) To encourage development of economic recovery of oil and gas reserves in the state, in particular the research and development leading to economic recovery of unconventional oil and gas reserves, research or special projects whose objective is to devise and develop methods may be approved by the state geologist as units complete within themselves. Unit approval may be obtained by submitting to the state geologist a project report specifying all pertinent details of the proposed research or development project. Blanket approval for an application for a permit to drill wells may be granted at the discretion of the state geologist, provided the location and numbers of the wells are anticipated with a reasonable degree of accuracy.

(2) No well drilled as an oil or gas well shall be drilled closer than approximately one hundred sixty-five feet (165') to a unit boundary.

(3) Reports of the pertinent details of overall project operation shall be submitted quarterly to the state geologist for his or her study and use. Confidentiality may be granted upon written request as required in 10 CSR 50-1.020.

AUTHORITY: section 259.060, RSMo 2000, and section 259.070, RSMo Supp. 2015. Original rule filed Sept. 12, 1973, effective Sept. 22, 1973. Amended: Filed Sept. 15, 2015, effective March 30, 2016.*

**Original authority: 259.120, RSMo 1965, amended 1972 and 259.070, RSMo 1965, amended 1972, 1983, 1987, 1993, 1995, 2012, 2015.*

B. MDNR MOU/MOA Documents

2019 Underground Injection Control (UIC) Permits at Remediation Sites

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

MEMORANDUM

DATE: October 21, 2019

Reviewed in WPP
NOV 0 1 2019

TO: Chris Wieberg, Director
Water Protection Program (WPP)

Amber Steele, Director
Geological Survey Program (GSP)

FROM: John D. Jurgensmeyer, Director
Environmental Remediation Program (ERP)

Chris Nagel, Director
Waste Management Program (WMP)

SUBJECT: Underground Injection Control (UIC) Permits at Remediation Sites

This memo serves to clarify the procedures for the coordination between the ERP, WMP, WPP, and GSP for sites where the remediation of contaminated soil or groundwater involves underground injection.

It is understood by our respective programs that the ERP and WMP has primary oversight of remedial actions at contaminated sites. Given that our respective programs desire to facilitate and expedite remedial projects at contaminated sites, it is mutually agreed that remedial projects overseen by the ERP and WMP where injection of compounds into the ground is necessary to complete the remedial actions, no approval nor permit from the WPP will be needed so long as the remedial action work plans include all the elements described in Attachment A to this memo. It is understood that the ERP and WMP will be responsible for determining the plan's compliance with those requirements and report underground injection activities that are significantly noncompliant to the WPP for possible enforcement action.

The ERP and WMP agrees to notify the WPP, GSP, Environmental Emergency Response, and the appropriate regional office when underground injection events take place and provide information, when requested, to the WPP, GSP, Environmental Emergency Response, and appropriate regional office. The ERP and WMP also agrees to provide documentation to comply with the reporting requirements under the state primacy for the federal UIC Program. Attachment B summarizes the minimum reporting and notification requirements for the ERP and WMP.

JJ/CN:dd

Attachment A
Attachment B

Recycled paper

Attachment A

Underground Injection Control (UIC) Documentation and Informational Requirements for Remediation of Contaminated Sites within the Environmental Remediation Program and the Waste Management Program	
Conceptual Site Model (CSM)	Facility and owner/facilities manager information for site.
	Map of site with any pertinent features.
	Depth and volume of soil contamination.
	Geological features present in ¼ mile radius of site.
	Soil type(s).
	List of contaminants and highest levels above standards in soil and groundwater and estimated mass of contaminants.
	List of other wells at the site including abandoned, active domestic, aquifer recharge, aquifer remediation, automobile service station disposal, commercial and industrial use, ground source heat pump, improved sinkholes, industrial drainage, mine backfill, monitoring, and others not specifically listed.
	Cross section of site that includes depth to bedrock, depth to water bearing zone(s), depth of injection, area of soil and groundwater contamination, utilities, septic tanks system, etc.
Injection Plan	Class V Well Inventory Form for planned or actual injection wells. Updates should be sent as wells are installed or abandoned.
	Brief description of the purpose of injection. (e.g. increase biologic activity to increase attenuation, chemical reaction with contaminant, solidification and stabilization)
	Safety Data Sheets (SDSs) for injected material and literature research if biological agents are introduced. Are these biological organisms already present in soil and at what concentrations?
	Map showing extent and concentration of contamination. The map should also include actual or planned location of injection wells with latitude and longitude (recorded in decimal degrees to five decimals). Updates should be sent as wells are installed or abandoned.
	Schematic of injection wells.
	Number of planned or actual injection points, injection wells, or injection trenches.
	Number of pounds of the chemical that will be injected.
	Timetable for injection and a description of the monitoring program to assess the efficacy of the injection. A list of wells to be sampled and sampling methods to be used to analyze soil and groundwater samples to demonstrate the effectiveness of treatment.
	Contingency plan for further investigation and/or further remediation and/or analysis of different remedial alternatives if levels do not reach cleanup criteria in the time frame predicted. Implementation of the contingency will require approval from the department.
	If injected into an aquifer, explain how the injected chemicals will be withdrawn or reduced to pre-injection levels? The following information should be collected for each hydraulically distinct zone into which injection is to occur both prior to and following injection: biochemical oxygen demand (BOD), Chemical Oxygen Demand (COD), total organic carbon (TOC), Ammonia as N, groundwater flow velocity, directions, gradients,

	temperature and acidity.
	A geologist or professional engineer registered in Missouri should seal any documents proposing subsurface injection of materials for remediation purposes and/or evaluation of the efficacy of such remediation.
Permits	Injection wells are subject to well certification and registration in accordance with Missouri Geological Survey (MGS) regulations and statutes. Please note that drillers must also be permitted through MGS.
	If the process results in a surface discharge, then a separate Missouri State Operating Permit for such discharge may be required from the Water Protection Program.

Attachment B

Overview of Environmental Remediation Program (ERP) and Waste Management Program (WMP) Reporting Requirements for Underground Injection Control (UIC)			
Receiving Agency	**Notifications and Documentation**		**When to Send**
Missouri Geological Survey	Underground Injection Work Plan Approval Letter		As soon as the letter is issued by the ERP or WMP
	Class V Well Inventory Form		With the ERP or WMP work plan approval letter and as updates become available
	Map showing planned locations of injection wells		With the ERP or WMP work plan approval letter
	Updates to Class V Well Inventory Form		As soon as it is available
	Map showing actual locations of injection wells		As soon as it is available
	Notification of an underground injection event		At least ten days prior to the start of an injection event, if possible. Otherwise, as soon as possible but no less than 24 hours prior to the injection event.
	Site specific status reports for ERP or WMP sites with underground injection projects		Semi-Annually - First Week of April and Annually First Week of October
	United States Environmental Protection Agency (EPA) Forms*	7520-1: Permit Review and Issuance/ Wells in Area of Review	Annually - First Week of October
		7520-2A: Compliance Evaluation	Semi-Annually - First Week of April and Annually First Week of October
		7520-2B: Compliance Evaluation Significant Noncompliance	Semi-Annually - First Week of April and Annually First Week of October
		7520-3: Inspections Mechanical Integrity Testing	Semi-Annually - First Week of April and Annually First Week of October
		7520-4: Quarterly Exceptions List	Quarterly - First Week of January, April, July, and October
		**Note that these forms are subject to changes or elimination by the EPA.*	
	Site specific status reports for contaminated site with significant noncompliance for UIC		Quarterly - First Week of January, April, July, and October.
Environmental Emergency Response	Notification of an underground injection event		At least ten days prior to the start of an injection event, if possible. Otherwise as soon as possible but no less than 24 hours prior to the injection event.

Regional Office	Notification of an underground injection event	At least ten days prior to the start of an injection event, if possible. Otherwise as soon as possible but no less than 24 hours prior to the injection event.
Water Protection Program	Notification of an underground injection event	At least ten days prior to the start of an injection event, if possible. Otherwise as soon as possible but no less than 24 hours prior to the injection event.
	Notice of significant noncompliance for underground injection activity	As soon as possible.

MEMORANDUM of UNDERSTANDING

MISSOURI DEPARTMENT of NATURAL RESOURCES

MISSOURI DEPARTMENT of HEALTH AND SENIOR SERVICES

Table of Contents

Departmental Mission Statements

The mission of the Department of Natural Resources is to preserve, protect, restore and enhance Missouri's natural, cultural and energy resources and to inspire their enjoyment and responsible use for present and future generations.

The Department of Health and Senior Services enhances quality of life for all Missourians by protecting and promoting the community's health and well being of citizens of all ages.

Preamble

This Memorandum of Understanding (MOU) defines the activities that the Missouri Department of Health and Senior Services (DHSS) and the Missouri Department of Natural Resources (DNR) conduct in protecting the public health and the environment from contamination due to physical, chemical, radiological, and biological agents.

The main purpose of this agreement is to provide a common understanding of the responsibilities of each agency concerning the investigation, assessment, and control of physical, chemical, radiological, and biological agents in the environment. In general, DHSS is responsible for risk assessment, which is the process used to quantitatively or qualitatively estimate and characterize the probability of adverse effects occurring as a result of physical, chemical, radiological, or biological contamination. In general, DNR is responsible for risk management, which is the process of weighing and selecting options and implementing controls to assure an appropriate level of protection from risks posed by physical, chemical, radiological, or biological contamination. Risk assessment is one of many tools used in the risk management process. Because of specific legislation or funding issues, there are exceptions to this general division of responsibilities. These exceptions are noted in the appropriate sections of the MOU.

Nothing in this agreement shall be construed to restrict in any way either department's authorities and/or responsibilities under the federal and state statutes with which they are charged.

Section 1: General

AGENCY ROLES

Missouri Department of Health and Senior Services (DHSS) protects the public and public health by

- identifying and preventing disease;
- assessing risk from exposures to toxic and radioactive materials;
- investigating, preventing, and remediating on-site sewage disposal system problems;
- responding to radiological accidents and incidents; and
- enforcing state and federal statutes on food protection, lodging, infectious waste from hospitals, on-site sewage, and radiological health.

Missouri Department of Natural Resources (DNR) protects the public health and the environment by --

- providing technical and financial assistance;
- providing information to the public;
- enforcing state and federal statutes on air, drinking water, wastewater, hazardous waste, solid waste; and
- providing emergency response services to protect the public and the environment from releases of hazardous substances.

DNR and DHSS agree to actively promote and support coordination between the departments and with all local agencies involved in environmental health or environmental protection activities.

DHSS maintains contracts with all local public health agencies within the state of Missouri and provides these agencies with advice, assistance, and consultation.

DNR maintains air pollution control contracts with St. Louis County Department of Health and the City of Springfield-Greene County Health Department, as well as the City of St. Louis Health Department and Kansas City Health Department.

PARTIES

This agreement is entered into by the DNR Director and the DHSS Director. References to the directors of these two departments may be construed to mean their appropriate designees.

A. REVIEW COMMITTEE

This agreement will be reviewed each year by DNR and DHSS. The directors will each appoint representatives to meet at least once a year to review and resolve problems associated with the implementation of this agreement.

B. TERMS

This agreement shall remain in effect from the date of execution. It may be terminated by either party with at least sixty (60) days written notice. This agreement may be modified upon the initiative of either party. Any modifications must be in writing and be signed by the DNR and DHSS directors.

Section 2: Coordination

A. NOTIFICATION

Both departments agree to notify the other of information pertaining to potential contamination which may affect public health or the environment in accordance with timeframes set out in each section of this MOU. Notification will be immediate in the event of emergency.

Both departments agree to notify the other immediately upon receipt of information pertaining to confirmed or highly probable illnesses suspected to be related to an environmental source.

After normal business hours, the appropriate single point of contact for notification at DNR shall be the Environmental Services Program's (ESP) Environmental Emergency Response (EER) twenty-four hour telephone hotline at (573) 634-2436 unless otherwise specifically designated in other provisions of this MOU, referenced Standard Operating Procedures (SOPs) or cited guidance documents. For DHSS Department Situation Room (DSR), the 24-hour telephone number is (800) 392-0272. The respective duty officers will be responsible for notifying appropriate program and management staff.

B. RELEASE OF PUBLIC INFORMATION

When possible, both departments agree to coordinate news releases concerning physical, chemical, radiological, or biological agents in the environment which have a potential effect on public health or require regulatory action. When both departments have roles in a situation, joint releases should be issued. DNR will be the lead agency for public statements or news releases about environmental regulatory actions, emergency responses other than radiation emergencies, and risk management decisions. DHSS will be the lead agency for statements or releases about human toxicity of physical, chemical, radiological or biological agents; risk and health assessment; radiological emergency response; and epidemiological studies of environmental contamination or environmentally-related disease. More specific procedures listed elsewhere in this document may apply to specific incidents.

C. EMERGENCY RESPONSE

The DNR Environmental Services Program (ESP) is the lead agency for hazardous substance emergencies, as provided in Sections 260.500-550, RSMo.

The DHSS Bureau of Environmental Epidemiology (BEE) is the lead agency for radiological emergencies when there is a risk to public health or safety. If there is no risk to public health or safety but a threat to the environment, DNR will assume the lead role.

The two departments agree to provide each other their formal plans for dealing with emergencies and to keep the plans up-to-date. Each agency will update the other with the names and home phone numbers for their designated emergency response personnel.

D. EPIDEMIOLOGICAL STUDIES, TOXICOLOGICAL EVALUATIONS, RISK ASSESSMENTS, AND OUTBREAK INVESTIGATIONS

DHSS through the Section for Disease Control and Environmental Epidemiology (DCEE) is the lead agency for assessing the human toxicity and risk of physical, chemical, radiological, and biological agents in the environment and for investigating communicable disease outbreaks suspected to be related to environmental causes. Most of these responsibilities fall within two bureaus of DCEE: the Bureau of Environmental Epidemiology (BEE) and the Bureau of Environmental Health Services (BEHS).

BEE will conduct risk/cleanup document reviews, determine safe residual site contamination levels, produce risk determinations for environmentally contaminated sites, and create Human Health Baseline Risk Assessments, Residual Risk Assessments, Preliminary Remedial Goals, or review such documents based on Environmental Protection Agency (EPA) Risk Assessment Guidance for Superfund (RAGS) or other methodologies as agreed upon by DNR and DHSS. This activity will require that a prior funding mechanism be established between DNR and EPA to redirect funding to DHSS for that purpose. These activities will be completed within a time frame agreed upon between DNR personnel requesting the risk assessment and the BEE personnel conducting the risk assessment.

BEE will advise DNR about changes in safe cleanup level determinations based on changes in toxicological information.

BEE will provide DNR with assessments of the toxicity of environmental agents upon request, as staffing (budget) and expertise permit.

Each agency will invite the other to participate in any group set up by either agency to review or modify any cleanup regulations or guidelines in order to assure protection of human health and the environment.

DHSS will conduct epidemiological studies related to environmental contamination or reports of non-communicable environmentally-related disease when DHSS considers that

activity necessary to protect public health. DHSS will consult and notify DNR of the results prior to release to the public.

DHSS will lead epidemiological and environmental investigations of suspected outbreaks of communicable diseases. If a suspected environmental source of an outbreak is regulated by DNR, DNR will conduct the environmental portion of the investigation with assistance and in coordination with the local health authority and/or staff from DHSS.

If the outbreak involves a public water system, DNR will conduct the inspection and evaluate the water system, coordinating with DHSS as appropriate.

For the purpose of fulfilling air permitting requirements, the DNR Air Pollution Control Program (APCP) will determine the Acceptable Ambient Level (AAL) following the protocol outlined in Section 8. BEE will assist the APCP in its determination of the AAL. Prior to the release of the AAL, BEE will have 30 days to review and comment on the recommended AAL.

E. LABORATORY SERVICES

Each department may request that the other's laboratory analyze environmental samples as budgets and work schedules permit. Special requests for DNR laboratory support should be in writing from the BEE Bureau Chief to the Environmental Services Program (ESP). Any DHSS laboratory or local health department employee, who wants to have samples analyzed by DNR/ESP, is to request that through BEE. Special requests for DHSS laboratory support should be in writing from the appropriate DNR program director, or the Division of Environment Quality director to the Director of the State Public Health Laboratory (SPHL).

The provision of laboratory services by DHSS for drinking water microbiological testing is covered under an annual work plan.

F. SHARING OF DRINKING WATER SUPPLY ANALYSES

Each agency agrees to make any results of analysis of drinking water samples not specifically covered by other provisions of this MOU available to the other upon request. DNR or DHSS staff will contact the DNR Environmental Services Program (ESP) Environmental Emergency Response (EER) twenty-four hour hotline at (573) 634-2436 immediately when contamination potentially related to a release, spill or other emergency situation is found in public or private drinking water supplies. DNR/EER will notify DHSS immediately upon becoming aware of such release, spill or other emergency situation involving drinking water supplies. DNR/EER will contact other DNR programs/regions and DHSS for appropriate follow-up.

G. IMPLEMENTATION GUIDELINES FOR PROGRAMMATIC AND/OR POLICY CHANGE

Pursuant to Executive Order 02-05, both departments are required to provide an opportunity for comment on proposed rules that significantly impact the mission of the other agency at least 30 days before a proposed regulation is filed with the Secretary of State. In addition, both departments agree to work together to review proposed policies and program guidelines that may have an impact on the operations of the other department prior to dissemination to the general public. Both agencies agree to meet at least annually to review the overall interactions of cooperative activities.

H. CANCER INQUIRY COMMITTEE REPRESENTATION

DNR will provide a representative to the DHSS Division of Community and Public Health's Cancer Inquiry Committee. This representative will attend meetings of the committee to provide DNR's perspective regarding environmental concerns expressed to the committee by the citizens in their cancer inquiries. This representative will be alerted any time the committee determines a cancer cluster may be related to environmental contamination so the representative can communicate that information to other DNR personnel for possible follow-up.

I. ANNUAL WORK PLANNING MEETING

DNR, the Section for Disease Control and Environmental Epidemiology (DCEE), and other DHSS programs represented in this MOU will meet at least annually to advise each other about their projected annual work plans or strategic objectives so each agency is aware of activities that may impact them in the upcoming year. If either agency knows of specific activities or products they plan to request from the other agency for that year, this meeting will be the appropriate place to begin discussions regarding those needs. This meeting, or associated meetings involving program-level staff, should be used to discuss any coordination or cooperation issues between the agencies.

J. FUNDING

The agencies agree that the cost of all services, personnel, equipment, material or information shall be provided through an existing funding source (e.g., Hazardous Waste Fund (HWF), cooperative agreements with the U.S. Environmental Protection Agency (EPA), DNR-DHSS work plan, etc.). Funding for services not covered by an existing source will be negotiated at the time the service is requested.

Section 3: Water Pollution Control

A. Overview

The purpose of this section is to provide a common understanding of the responsibilities and provide guidance for the cooperative activities of DHSS and DNR related to domestic wastewater treatment and water pollution control. The goal is to improve the protection of public health and the environment through more effective communication, cooperation, and coordinated response, when appropriate, to wastewater treatment.

The specific agency units whose activities are covered in this section are:

- The DHSS Division of Community and Public Health (DCPH), Section for Disease Control and Environmental Epidemiology (DCEE)
    - Bureau of Communicable Disease Control and Prevention;
    - Bureau of Environmental Epidemiology; and the
    - Bureau of Environmental Health Services.
- The DNR Division of Environmental Quality (DEQ):
    - Water Protection Program (WPP);
    - Financial Assistance Center (FAC);
    - Regional Offices;
    - Environmental Services Program (ESP);
        - Environmental Emergency Response Section (EER); and
- The DNR Division of Geology and Land Survey (DGLS).

B. General Authority

1. DHSS

Per Section 192.011, RSMo, DHSS shall monitor the adverse health effects of the environment and prepare population risk assessments regarding environmental hazards including, but not limited to, those relating to water, air, toxic waste, solid waste, sewage disposal, and others. DHSS is to make recommendations to DNR for improvement of public health as related to the environment.

Per Section 192.020, RSMo, DHSS has primary responsibility for safeguarding the health of the people in the State and all its subdivisions.

2. DNR

The Missouri Clean Water Law Chapter 644, RSMo sets forth requirements to protect the waters of the state and to maintain and improve their quality for beneficial uses and ensure that no waste is discharged into any waters of the state without first receiving the necessary treatment or other corrective action to protect the legitimate beneficial uses of such waters and provide for the prevention, abatement and control of new or existing water pollution and to cooperate with other agencies of the state in carrying out these objectives.

The Missouri Clean Water Law Chapter 644 Section 644.051 states: "It shall be unlawful for any person to build, alter, replace, operate, use or maintain any water contaminant or point source in this state that is subject to the standards, rules or regulations promulgated pursuant to the provisions of section 644.006 to 644.141 unless such person holds a permit from the commission..."

DNR has jurisdictional responsibility for all wastes not defined as domestic which includes all industrial discharges. This category includes facilities that discharge contact stormwater.

A. Joint Responsibilities

1. DCEE and WPP will meet quarterly, or as needed, to ensure that the required coordination is occurring. Agenda items will include jurisdictional issues, interagency training needs, quarterly violations lists, new and proposed rules and statutes, and other topics as needed.

2. DCEE, WPP, DNR Regional Offices, ESP and EER will continue to work together to maintain and update as needed the existing Standard Operating Procedures.

3. DCEE and WPP will cooperate in the adoption of EPA's Voluntary National Guidelines for Management of On-site and Clustered (Decentralized) Wastewater Treatment Systems and implement management strategies where possible. DCEE will request DNR's support and cooperation to implement management elements under DNR jurisdiction.

4. DCEE and WPP will work together to promote knowledge of roles and responsibilities of each agency among agency staff, local public health agency staff, and outside stakeholders. This will cover jurisdictional matters and each agency's

role and authorities related to decentralized wastewater treatment options, residential housing development requirements, etc.

5. DCEE and WPP will cooperate in the development and implementation of processes for facility reporting, inter-agency notification, and public notices of bypasses, non-permitted discharges, spills, and potential spills.

6. DCEE and WPP will continue to cooperate in determining the most practicable, cost effective, health and environment protective wastewater treatment solutions for regulated facilities to ensure that the goals of both agencies are met.

DOMESTIC WASTEWATER

A. Overview

The purpose of this section is to provide a common understanding of responsibilities and provide guidance for the cooperative activities of DHSS and DNR related to domestic wastewater treatment. The goal is to improve the protection of public health and the environment through more effective communication, cooperation, and coordinated response.

B. General Authority

1. DHSS

The Missouri On-Site Sewage Laws, Sections 701.025-701.059, RSMo form the bases for the authority to regulate on-site wastewater systems by the DCEE. Subsection 701.033.1(1) directs DHSS to promulgate rules to carry out provisions of this law. The following rules have been established:

- 19 CSR 20-3.015 The Operation of On-site Sewage Treatment and Disposal Systems
- 19 CSR 20-3.040 Environmental Health Standards for the Control of Communicable Diseases
- 19 CSR 20-3.060 Minimum Construction Standards for On-Site Sewage Disposal Systems;
- 19 CSR 20-3.070 Requirements for On-Site Wastewater Treatment System Inspectors/Evaluators;
- 19 CSR 20-3.080 Requirements for Percolation Testers, On-Site Soils Evaluators and Registered On-Site Wastewater Treatment System Installers.

DHSS regulates lodging establishments (Sections 315.005 to 315.079, RSMo), food establishments (19 CSR 20-1.025), food processing facilities (Sections 196.010 to 196.271, RSMo), and child care facilities (Section 210.252, RSMo) (hereafter "DHSS regulated facilities"). DHSS requires regulated facilities to comply with DNR wastewater regulations and/or minimum on-site sewage regulations.

Domestic sewage is defined in Section 701.025, RSMo as: "...human excreta and wastewater, including bath and toilet waste, residential laundry waste, residential kitchen waste and other similar waste from household or establishment appurtenances..." This definition includes wastewater from restaurants, office buildings, church buildings, and many retail stores and similar facilities. It does not include process wastewaters, such as those from meat processing plants, wineries, cheese making facilities, mortuaries, truck/automobile service garages with floor drains, veterinary clinics, surgery suites, kennels, live fish bait operations, bio-fuel production facilities, and any other non-domestic wastes from commercial or industrial facilities.

Section 701.031, RSMo requires property owners of all buildings where people live, work, or assemble to provide for the sanitary disposal of all domestic sewage by discharging either to an on-site sewage system in accordance with on-site sewage laws and rules or in accordance with Chapter 644, which is administered by WPP.

A permit is required for the installation or major repair of an on-site sewage system except that owners of single-family residence lots of three acres or more and owners of ten acres or more with at least ten acres for each single family residence are exempt (unless adjacent to a lake operated by the Corps of Engineers or public utility.)

Conditions for the exemptions are:

- The system must be located in excess of ten feet from the property lines;
- No effluent may enter adjoining property, contaminate surface or groundwater or create a nuisance; and,
- For the ten acre exemption, no single-family residence on-site system may be located within three hundred sixty feet of any other.

Under Section 701.035, RSMo, political subdivisions are allowed to enforce ordinances establishing a system for the regulation and inspection of on-site systems, provided such ordinance establishes a system at least equal to state regulation. Local ordinances have been adopted by a number of municipalities and counties, including counties with ordinances giving authority to an agency other than the local public health agency (LPHA). Local agencies, including LPHAs whether or not they have an on-site system ordinance, implement local policies and procedures and hire staff independently.

DCEE or the local authority will have authority over wastewater treatment systems for single-family residences including single-family residence lagoons (one house – one lagoon) and holding tanks. DCEE or the local authority will also have jurisdiction over other sources of domestic sewage flows of three thousand gallons per day (3,000 gpd) or less, including multifamily residences, commercial facilities, and restaurants, which discharge into subsurface soil treatment/dispersal systems or holding tanks.

Section 701.043.1.(7), RSMo and 19 CSR 20-3.060 (6)(L), provide authority for DCEE to allow variances to the minimum separation distances, or to the minimum sizing of the soil treatment/dispersal area, for on-site wastewater treatment systems existing prior to January 1, 1996 or for lots platted prior to January 1, 1996.

Under Section 701.043.2., RSMo, when it is determined that an on-site wastewater treatment system complies with the state standards, additional requirements cannot be imposed.

2. DNR

DNR has jurisdictional responsibility for all flows greater than three thousand (>3,000) gallons per day along with some sources of domestic flows three thousand (3,000) gallons per day or less that do not discharge into subsurface soil absorption systems such as lagoon treatment systems serving multi-family, commercial and DHSS regulated facilities.

Title 10 – Department of Natural Resources, Division 20 – Clean Water Commission contains regulations promulgated under Chapter 644 to carry out provisions of the law.

- 10 CSR 20-6.010 Construction and Operating Permits
- 10 CSR 20-6.030 Disposal of Wastewater in Residential Housing Developments
- 10 CSR 20-7.015 Effluent Limits
- 10 CSR 20-7.031 Water Quality Standards
- 10 CSR 20-8 Chapter 8 - Design Guides

3. Determining Jurisdiction

Jurisdiction for all new wastewater treatment systems using soil treatment/dispersal or holding tanks will be determined by calculations of flow according to Table 2A of DHSS rule 19 CSR 20-3.060, Minimum Construction Standards for On-Site Sewage Disposal Systems.

Jurisdiction for existing facilities can be determined by using accurate and verifiable water use data in determining peak flows – not average daily flows - in gallons per day. Peak flow calculations should be compared to estimated daily flows according to Table 2A of the DHSS rule.

C. Roles and Responsibilities

1. DHSS

Section (I)(B) of 19 CSR 20-3.060 contains the Minimum Construction Standards for On-Site Sewage Disposal. When the DCEE receives an inquiry or permit application for a commercial/industrial facility or subdivision, DCEE will direct the developer to contact the DNR regional office or the WPP for DNR to review issues related to the Missouri Clean Water Law. Commercial facilities with domestic sewage flows less than or equal to three thousand gallons per day (≤3,000 gpd) do not need to be referred to the WPP when proposing to install subsurface soil absorption systems or holding tanks. However, any proposed soil treatment/dispersal system that would not comply with DHSS regulations or would discharge to the surface should be directed to the DNR regional office. The agencies will cooperate in reviewing the method of wastewater treatment for facilities generating small volumes of domestic wastewater and new housing developments.

DHSS may permit a lagoon system for single-family residences to include a small in-house business such as a child care facility licensed for up to 10 children, provided the additional wastewater is domestic and not more than 50% of the total design flow. If the additional flows are greater, or would become greater than 50% then the lagoon system would be the jurisdiction of DNR.

DHSS does not permit on-site wastewater treatment systems, such as sand filter systems or constructed wetlands that are designed to discharge to the soil surface.

When there is a concern for groundwater contamination at a site proposed for on-site wastewater treatment, DCEE may request an investigation by a registered geologist using the DGLS form, *Assessment of Individual On-Site Waste Disposal Geological Limitations* (19 CSR 20-3.060(1)(A) 49).

2. DNR

DNR has responsibility for all point source surface discharge of domestic wastewater whether or not the design flow is less than three thousand gallons (3,000 gals.) per day. All facilities which are proposing a point source surface discharge must obtain a construction and operating permit from WPP or DNR regional offices.

Most manufacturing facilities are considered potential sources of industrial waste and should be referred to DNR for determination of permitting authority.

DNR will retain jurisdiction over holding tanks, sewage tanks and other components intended for use as a part of a DNR permitted wastewater collection and treatment system.

The WPP has developed design criteria and standards for small sewage works (10 CSR 20-8.020) and criteria for determining the method of wastewater treatment in residential housing developments (10 CSR 20-6.030); WPP or DNR regional offices will review and approve sewage treatment plans for subdivisions and DHSS regulated facilities that require a construction permit under 10 CSR 20-6.010. WPP and the DNR Regional Offices will issue permits to construct and operate domestic wastewater treatment facilities, when required for DHSS regulated facilities. DNR permits are available for review electronically over the internet.

DNR has responsibility for determining when specific no–discharge facilities are eligible for permit exemptions. The exemption from construction and operating permits is possible when a facility generates 3,000 gallons per day or less of domestic wastewater that is held within a no-discharge lagoon, followed by either on-site land application or is pumped and hauled to a permitted treatment or disposal facility. If a facility satisfies these criteria, it is then exempt by rule and does not require WPP or DNR Regional Office approval, unless the department determines that construction or operating practices are not adequate. Nothing shall prevent the WPP or DNR Regional Office from taking action to ensure that a facility does not discharge into surface or groundwater of the state, including requiring a permit for a facility that was previously exempt. Even if no permit is required, the facility (lagoon) will remain the jurisdiction of DNR throughout its life.

If it can be demonstrated to the WPP or DNR Regional Office that an existing DNR permitted facility (lagoon) has flows less than or equal to 3,000 GPD and is functioning as a no-discharge facility as described above, then the WPP or DNR Regional Office may terminate the operating permit. If the no-discharge facility serves a business (convenience store, hotel, etc.) regulated by DHSS, the WPP or DNR Regional Office will give written notification (via email) to DCEE that the permit has been terminated and that the facility (lagoon) will remain the jurisdiction of DNR throughout its life.

10 CSR 20-6.030 Disposal of Wastewater in Residential Housing Developments, sets forth requirements for developers of residential housing to determine the method of wastewater disposal. The rule applies to all new residential housing developments and existing developments that were required to comply with previous regulations, but have not received department approval. Approval under the residential housing rule does not obligate DHSS to approve an on-site wastewater treatment system on any lot within any residential housing development. DNR is also responsible for approving the method of domestic wastewater treatment in multiple family housing developments with seven or more units or any expansion of three or more units of an existing development or complex, that disperses effluent into subsurface soil

treatment/dispersal systems when domestic sewage flows are less than or equal to 3,000 gallons per day. Multiple family housing developments may include duplexes, quadplexes, motels, hotels, apartments, RV campgrounds and trailer parks. The WPP will provide copies of all residential housing developments approvals to the DCEE On-site Sewage Program and/or local administrative authority.

Existing residential housing developments shall be reviewed on a case by case basis to determine if the development requires approval under the residential housing development rule as described above.

Individual on-site wastewater treatment systems shall not be installed on any individual lot in a development that proposes or has been permitted for a centralized collection and treatment facility, unless, the facility owner has obtained a written waiver from the continuing authority of the centralized treatment facility, per 10 CSR 20-6.010(3)(B), and has received written approval from DNR for that method of wastewater treatment as described in 10 CSR 20-6.030 Disposal of Wastewater in Residential Housing Developments.

D. Cooperative Activities

Bypasses, non-permitted discharges, spills, and threatened spills from DNR regulated wastewater treatment facilities

1. DHSS

DCEE has the responsibility to evaluate the health risk of non-permitted sewage discharges, spills, or threatened spills and to cooperate in the issuance of health advisories, where appropriate. DCEE will perform risk assessments, provide toxicological evaluations, and conduct epidemiological studies when appropriate. This responsibility comes from Section 192.020, RSMo, which requires DHSS to safeguard the health of Missourians by investigating and preventing disease.

DCEE will notify WPP and/or DNR Regional Office after becoming aware of any DHSS regulated facility that appears to be in violation of the Clean Water Act. WPP and/or DNR Regional Office will work with DCEE to determine if a joint investigation is needed. WPP and/or DNR Regional Office will keep DCEE informed of the investigation and the disposition of the situation.

DCEE will notify DNR's EER twenty-four hour telephone hotline at (573) 634-2436 for sewage releases after 5:00 PM, on weekends and holidays. All other calls should go to DNR Regional Offices during normal business hours. WPP and/or DNR Regional Offices will keep DCEE informed of the investigation and the disposition of the situation.

DCEE will determine when they will advise appropriate local health departments of bypasses, non-permitted discharges, spills, and threatened spills.

DCEE will provide field support when needed in relation to actual or potential human exposure to sewage.

DCEE will, in cooperation with DNR and appropriate local public health agencies, issue health advisories and public information documents when the situation affects the public health.

2. **DNR**

DNR will notify DCEE of all spills and unauthorized discharges. WPP and/or DNR Regional Offices will copy DCEE on correspondence between DNR and DHSS regulated facilities.

There are cases where an observed bypass at a treatment facility may be an authorized discharge; therefore, not requiring reporting and response. The State of Missouri has several cities that have a combined sewer overflow (CSO) conveyance system for their municipal stormwater and wastewater. Generally, the CSO discharges occur during wet weather events and are permitted discharges from defined outfall locations, and therefore would not require reporting or DNR response. In the case of an unpermitted discharge in a CSO community, standard reporting and response procedures would be followed.

Service line breaks may pose a threat to public health or water quality if the resulting spill is significantly large. Most service line breaks are small and have only local impacts. As a matter of practice, when DNR becomes aware of such a spill, DNR notifies the responsible sewer operator of the condition and takes no further action.

DNR agrees to collaborate with DCEE on the release of public health advisories and other related public health information as appropriate.

In the case of actual or potential human exposure, ESP will provide DCEE with a copy of all corresponding laboratory reports.

Discharges or surfacing from on-site systems

DCEE will notify WPP and/or the DNR Regional Office Water Pollution Control Unit after becoming aware of sewage discharges from multi-family residences, small businesses or other DHSS regulated facilities if the discharges may reasonably be expected to enter waters of the state. WPP and/or DNR Regional Offices will determine with DCEE whether a joint investigation is needed. WPP and/or DNR Regional Offices will inform DCEE of the progress of the investigation and the disposition of the situation.

DCEE will notify WPP and/or the DNR Regional Office Water Pollution Control Unit after becoming aware of sewage discharges from single-family residences that may reasonably be expected to enter waters of the state. WPP and/or DNR Regional Office will work with the DCEE to determine if a joint investigation is needed. WPP and/or DNR Regional Office will keep DCEE informed of the investigation and the disposition of the situation.

WPP and/or DNR Regional Offices will notify DCEE when aware of sewage discharges from single-family residences, multi-family residences and businesses with flows less than or equal to 3,000 gallons per day. DCEE will keep WPP and/or DNR Regional Offices informed of the disposition of the situation.

On-site wastewater treatment system technologies

DCEE will request consultation with WPP, as appropriate, under Section 701.033.4, RSMo regarding the trial or experimental use of innovative systems for on-site wastewater treatment.

WPP will continue to coordinate with DCEE, as appropriate, under 701.033.4 regarding trial or experimental use of innovative systems for on-site wastewater treatment.

Underground Injection Control Program, Class V Well Inventory

DCEE will notify DGLS of any permit applications for on-site wastewater systems that receive effluent from multiple family developments or other establishments that serve 20 or more people per day with peak daily flows less than or equal to 3,000 gallons per day of domestic wastewater.

Financial assistance for decentralized wastewater treatment systems

DCEE and DNR will continue to work in cooperation with other stakeholders to implement a funding assistance program for the repair or replacement of malfunctioning individual single family on-site wastewater treatment systems. Both agencies will ensure that any program developed will be operated equitably and that Environmental Justice as defined by DNR is achieved.

DCEE and the FAC will continue to work together regarding jurisdiction, technical assistance, design review and permitting when decentralized (on-site and cluster) wastewater treatment systems are proposed for an underserved community and that community applies for financial assistance. Both agencies will ensure this is done equitably and that Environmental Justice as defined by DNR is achieved.

OTHER AREAS OF COORDINATION RELATED TO WATER QUALITY

Fish Advisory

A. Overview

DHSS annually issues a Fish Advisory for the consumption of sport-caught fish in Missouri. The fish tissue data collected by DNR is an important part of the information used to compose this advisory. This section of the MOU describes the specific responsibilities involved in this process.

B. General Authority

Under Section 192.011, RSMo, DHSS shall monitor the adverse health effects of the environment and prepare population risk assessments regarding environmental hazards including, but not limited to, those relating to water, air, toxic waste, solid waste, sewage disposal, and others. Under the same section, DHSS is to make recommendations to DNR for protecting public health as related to the environment. Under Section 192.020, RSMo, DHSS has primary responsibility for safeguarding the health of the people in the State.

DNR is authorized by the clean water law, to "encourage, participate in, or conduct studies, investigations, and research and demonstrations relating to water pollution and causes, prevention, control, and abatement thereof", by Section 644.026(5), RSMo. This would include monitoring for contaminants in fish tissue that may affect human health.

C. Roles and Responsibility

DHSS develops and releases an annual Fish Advisory. DHSS may provide input into the types of fish and locations to be sampled and make recommendations on the locations, fish and chemicals to be analyzed.

DNR will consider DHSS's input into its fish tissue monitoring plans. Once the monitoring and analysis have been completed, DNR will provide DHSS the results in a timely manner.

D. Cooperative Activities

DNR and DHSS will coordinate with each other and with the Missouri Department of Conservation (MDC) to discuss fish tissue monitoring plans and needs. This coordination will occur prior to preparation of sampling plans. Other meetings may be held during the course of the year if necessary.

303(d) Listing Methodology

Every two years, DNR prepares a list of impaired waters that require additional protection, known as the section 303(d) list. Prior to preparing this list, DNR creates a Methodology Document which guides the listing process in detail. The document describes what data is acceptable, how data for various parameters will be analyzed, and the statistical tools to be used. The methodology is developed in consultation with a variety of governmental and private stakeholders and is adopted by the Clean Water Commission. DHSS will be an active participant in this process, contributing to those portions of the methodology dealing with human health. DNR will consider DHSS's input.

Water Quality Standards

DNR is required to revise its water quality standards every three years. DNR will coordinate with DHSS in an inter-agency review of these proposed revisions. DNR will consider DHSS's input into the proposed revisions to state water quality standards that relate to human health protection.

Nonpoint Source Pollution

DCEE will assist DNR upon request with the review of applications for DNR Section 319 grants.

Section 4: Drinking Water

A. Overview

DNR and DHSS each have roles and responsibilities relating to water supplies. The mission of the DNR Public Drinking Water Branch is to ensure the provision of safe and adequate supplies of drinking water to the public and to safeguard groundwater supplies through the regulation of well drilling. DNR meets these responsibilities by regulating public water systems and the drilling and plugging of wells. Public water systems serve drinking water to at least 15 service connections or regularly serve at least 25 persons daily at least 60 days out of the year. They may be privately owned, such as convenience stores, or publicly owned, such as public water supply districts.

DHSS, in its mission to protect and safeguard the public, is concerned about the health of those who consume water. They regulate water supplies that serve facilities they regulate, provide instruction to regulated facilities about the use of water from public supplies, and provide advice and technical assistance to the public about water supplies.

In some instances (for example, certain child care facilities, restaurants, and convenience stores, and similar establishments) DNR and DHSS regulatory responsibilities overlap.

B. General Authority

1. DHSS

Under Section 640.100.3, RSMo (cum. supp. 2008), the Department of Natural Resources or the Department of Health and Senior Services (DHSS) shall, at the request of any water supplier, conduct any analyses or tests required pursuant to section 192.020 or the state statutes pertaining to the regulation of public water systems.

DHSS statutes and regulations require water supplies in lodging establishments (Section 315.024, RSMo), food establishments (19 CSR 20-1.025), food processing facilities (Sections 196.010 to 196.271, RSMo), and child care facilities (Section 210.252, RSMo) (hereafter "DHSS regulated facilities") to provide a safe drinking water supply. If these are public water systems, they must have a permit to dispense water and be in substantial compliance with the safe drinking water law and regulations. Private (non-public) water supplies serving DHSS regulated facilities must meet minimum construction and water quality standards set by DHSS.

DHSS has the responsibility to investigate and prevent disease under Section 192.020, RSMo including the inspection and sampling of private wells upon request, and the issuance of Boil Orders when necessary to safeguard the health of the people of Missouri.

DHSS as per Section 192.011, RSMo monitors for adverse health effects and

prepares population risk assessments regarding environmental hazards from water supplies and other environmental sources. DHSS makes recommendations to DNR for the improvement of public health as related to the environment.

2. DNR

Under Section 640.100.3, RSMo (cum. supp. 2008), the Department of Natural Resources or the Department of Health and Senior Services (DHSS) shall, at the request of any water supplier, make any analyses or tests required pursuant to section 192.020 or the state statutes pertaining to the regulation of public water systems.

DNR Public Drinking Water Branch (PDWB) has the responsibility and authority to administer, implement, and enforce the Missouri safe drinking water statutes (Sections 640.100-640.140, RSMo) and associated regulations (10 CSR 60- 1.010-16.030). This includes setting and enforcing standards for maximum contaminant levels, treatment techniques, disinfection, and public water system construction, as well as permitting, operator certification, backflow, and public notice requirements.

DNR has the responsibility to make and enforce regulations pertaining to well drillers and well construction standards under Sections 256.600-256.640, RSMo and 10 CSR 23-1.010 to 23-1.160.

3. Other

Neither agency has authority to regulate water supplies for private residences, except that DNR regulates the construction of new wells under certain circumstances and the plugging of abandoned wells. However, DHSS will offer advice and technical assistance to citizens about existing private water supplies or laboratory sample test results of these water supplies as requested. The DHSS State Public Health Laboratory (SPHL) will provide testing of water supplies for owners of non-public water systems.

C. Roles and Responsibility

1. DHSS

DHSS is responsible for providing microbiological analyses of public water supplies. DHSS will normally provide chemical and microbiological analysis for private water supplies.

DHSS shall provide at least one SPHL staff member to serve as the Laboratory Certification Officer (LCO) / Microbiology Program Manager for the Drinking Water Microbiology Laboratory Certification Program administered by the DNR PDWB. This laboratory certification program is administered under the provisions of the U.S. EPA Manual for the Certification of Laboratories Analyzing Drinking Water: Criteria and Procedures, Quality Assurance (MCLADW), Fifth Edition, 2005, EPA publication 815-

R-05-004. The Director of the DNR PDWB serves as the Certifying Authority (CA) for this program.

The LCO / Microbiology Program Manager will be responsible for the following:

- Meet the requirements for and perform the functions of the LCO and Program Manager positions as described in the MCLADW.
- Perform triennial on-site evaluations (audits) of certified drinking water microbiology laboratories in Missouri.
- Perform on-site evaluations (audits) of laboratories requesting certification for the first time.
- Perform reviews of certification documents from out-of-state laboratories requesting reciprocal certification in Missouri.
- Provide written evaluation reports to the DNR PDWB and make recommendations regarding the certification status of evaluated laboratories.
- Maintain records of each certified laboratory, including triennial evaluation reports, written responses, DNR PDWB certification documents (certificates and parameter lists) and annual proficiency testing reports.
- Provide technical assistance and training to laboratories to ensure they meet the requirements for certification.
- Work with US EPA Region 7 and DNR PDWB staff to ensure the Drinking Water Microbiology Laboratory Certification Program meets all federal and state requirements for the program.

DHSS will actively support DNR's efforts to seek renewal of the public drinking water primacy fee.

The DHSS State Public Health Laboratory will work with DNR to develop new procedures to provide DNR with results of tests of private water supplies. This is expected to include a mechanism for distinguishing between samples from domestic and multifamily wells where possible and reporting well locations to the extent practical.

DHSS Bureau of Environmental Public Health Services (BEHS) will as soon as practically possible but no later than 24 hours after becoming aware of the event, notify the PDWB and the appropriate DNR regional offices of possible waterborne disease outbreaks and investigations (excluding investigations involving only routine chemical sampling) related to public water systems. If this notification occurs outside of normal business hours, the notification will be made to the EER emergency response hot-line (573-634-2436). BEHS will collect samples, as needed, from public water supplies as part of investigations of possible waterborne disease outbreaks.

The BEHS will notify the appropriate DNR regional office within one (1) working day of all unsafe water samples from DHSS regulated facilities on public water systems or when cross connections with other water systems are observed.

BEHS will assure that DHSS regulated facilities with an unsafe water supply implement interim measures protective of public health until permanent corrective actions have restored a safe water supply. BEHS will follow established procedures to move to enforcement actions up to and including closure of establishments that do not implement prescribed interim measures or progress towards permanent corrective action. More detailed information about potential interim measures is available in the program portions of DHSS's Environmental Health Operational Guidelines (EHOG). BEHS or the LPHA will also follow DHSS guidelines related to posting appropriate notices within DHSS regulated facilities to protect public health.

BEHS will issue boil water orders or limit use orders to DHSS regulated facilities using private water supplies as per program standards. BEHS will assure that new facilities using private water supplies will comply with applicable program standards.

BEHS directs LPHA's to routinely collect water samples from all DHSS regulated facilities utilizing private and non-community public water supplies. This sample is to add validity to the routine samples submitted by the establishment by having a sample collected by a public health professional.

The Bureau of Environmental Epidemiology (BEE) will collect samples as needed from public water supplies to monitor for chemical contamination.

BEHS will assure new DHSS regulated facilities utilizing public water supplies will not be approved to operate without having a permit to dispense water (or having a written compliance plan with DNR) and being in substantial compliance with safe drinking water law and regulations.

BEHS will work with local public health agencies (LPHA's) when notified by DNR Regional Offices of a boil water order or boil water advisory, or limit use orders determined by DHSS to be of public health significance. The LPHA will contact the regulated facilities that are using the affected water system if their continued operation without interim measures might pose a risk to public health.

BEHS will notify the appropriate DNR regional office when there is a need for them to determine if the water supply serving a regulated facility is a public water supply.

2. DNR

DNR/PDWB is the agency responsible for issuing boil water orders or other orders limiting the use of potable water from public water supplies. DNR and DHSS boil water order procedures can be found in the *Drinking Water: Boil-Water Orders Manual.*

PDWB will notify the DHSS BEHS Bureau Chief and the appropriate DNR regional office before release orders or advisories are lifted. If these notices are in response to chemical contaminants, the Bureau Chief of BEE will also be notified. These notifications may be made by an email to the "Boil Order Notification Group" in normal situations; direct contact will be made when appropriate.

PDWB will make available to BEHS and BEE data on public water systems in noncompliance with microbiological, chemical and other standards of the safe drinking water law and regulations.

DNR will contact the public water system officials of boil water orders, boil water advisories and limit use orders and arrange for notice to the news media

DNR will assure that whenever a non-community water system has an acute violation, as defined in 10 CSR 60-8.010(2)(A), and/or an initial detection of E. coli, the facility owner/operator will immediately post a public notice prominently on all doors providing entrance to the facility warning the public that the water is unsafe. The system will continuously post this notice throughout the duration of the event.

Water system owners who desire to begin adding fluoride are required to submit engineering plans and specifications to PDWB for review and approval. PDWB staff inspects fluoridation installations as part of their routine operation and maintenance inspections of public water systems and may conduct final inspections of fluoridation installations in accordance with Regional Office Work Plan guidelines. DNR routinely provides fluoride monitoring data from public water systems to the DHSS Office of Primary Care and Rural Health.

If DNR becomes aware of a potential waterborne disease outbreak, they will as soon as practically possible, but no later than twenty-four hours after becoming aware of the event, notify the bureau chief of the DHSS Bureau of Communicable Disease Control and Prevention and the bureau chief of BEHS. After hours, notification from DNR will be made to the DHSS department situation room 1-800-392-0272.

The DNR PDWB Wellhead Protection Section will furnish the BEHS with copies of registrations for private and non-community public wells that serve DHSS regulated facilities when requested.

DNR will give operators of non-community water systems serving DHSS regulated facilities instructions on actions to be taken (such as installation of treatment systems) after a water sample from these supplies tests positive for bacterial, chemical or other contaminants.

DNR is responsible for providing chemical analyses of public water supplies. St. Louis County Environmental Health Laboratory is designated by DNR as the "Primacy" lab for radionuclide analyses of samples from public water systems.

DNR will seek renewal of the public drinking water primacy fee pursuant to its legislative authority under Section 640.100.5, RSMo (cum. supp. 2008). The statutory purpose of the primacy fee is to ensure the primacy agency has sufficient funding to comply with federal requirements for maintaining the primacy of state enforcement of the federal Safe Drinking Water Act.

DNR regional offices will expeditiously make a determination as to whether or not the water supply of a DHSS regulated facility constitutes a public water system when such determination is requested. Reasonable efforts will be made to verify the accuracy of information received from these facilities used to make this determination. This may involve joint visits to the facility by DNR and DHSS regional staff / LPHA staff.

DNR's Environmental Services Program laboratory may conduct chemical analysis of samples from private water supplies when necessary to support the activities of other environmental programs in DNR.

D. Cooperative Activities

The agencies will work cooperatively to prepare and disseminate information releases to the public in response to emergency situations such as floods and other natural or manmade disasters where private and public water supplies may have been affected. Each agency will ask the other to review and comment on information before it is released. The agencies will conduct these reviews expeditiously. Information reviewed after the effective date of this MOU that is to be used on subsequent similar events, if the information is unchanged, need not be reviewed again.

When necessary, DHSS and DNR staff will meet and share information on new technology related to drinking water treatment, purification, or filtration. They will provide informational releases to the industry and the public at large on accepted methods, practices, and technology for the provision of safe drinking water. This will ensure a consistent message from both agencies regarding these technologies.

Appropriate DHSS, BEHS and DNR programmatic and Regional staffs will keep each other informed on the status of enforcement activities related to water violations including issuance of notices of violation and closure of regulated facilities served by a non-community water supply.

Each agency will share information about water supplies where chemical contaminants have been detected, but do not exceed health-based thresholds. DNR's quarterly monitoring data from these public water supplies will be shared with DHSS personnel.

Each agency agrees to send Branch or Bureau level staff to quarterly meetings to discuss issues relating to water supplies.

Each agency agrees to conduct joint investigations of potential public water supply contamination whenever a PWS is thought to be a contributing factor to public health concerns. This will be through the sharing of locations of health concerns to ensure that DNR and DHSS staff can develop and implement an aggressive sampling plan to quickly and decisively determine if the PWS is involved. DHSS staff shall develop the sampling locations and make arrangements for entry to properties and DNR staff shall be responsible for taking and delivery of samples to the state laboratory for analysis.

DHSS conducts epidemiologic studies when routine surveillance or citizen concerns indicate that further investigation may be indicated. Citizens may contact DHSS or DNR with their concerns. When DNR is contacted, they should report these concerns to DHSS Bureau of Environmental Epidemiology. DHSS will investigate the concern, then notify DNR of the results of that investigation. In cases where it appears that disease rates related to the concern are greater than expected, DHSS and DNR will collaborate on sampling and other actions. When disease rates cannot be shown to be greater than expected, DHSS and DNR will collaborate to determine whether sampling is appropriate or not. If sampling is conducted, results will be shared between both agencies.

Section 5: Solid, Infectious, and Pharmaceutical Waste

Solid Waste

A. Roles and General Authority

1. DHSS

Authority for regulating solid waste storage is the responsibility of DCEE under Chapters 315, RSMo and 196, RSMo relating to lodging and food handling establishments.

2. DNR

Regulation of the disposal and treatment of solid waste is the responsibility of DNR Solid Waste Management Program (SWMP) and/or DNR regional offices and is regulated by Sections 260.200-260.345, RSMo and associated DNR rules.

B. Cooperative Activities

1. DHSS

DHSS agrees that DCEE will refer possible violations of solid waste statutes and rules to SWMP and the appropriate DNR regional office. These staff will also provide consultation to SWMP or DNR regional offices on solid waste problems related to insect and rodent control.

DCEE will conduct investigations of actual or suspected health effects possibly related to solid waste processing and disposal upon DNR's request as soon as possible.

2. DNR

DNR agrees that SWMP and the DNR regional offices will provide DCEE with technical advice on solid waste management upon request and as soon as possible. They will also investigate possible violations referred to them by DHSS staff as soon as possible.

Infectious Waste

A. Roles and General Authority

DHSS Division of Regulation and Licensure (DRL) is responsible for regulating infectious waste management and disposal in hospitals (Section 260.203, RSMo and 19 CSR 30-20.070, 19 CSR 30-22.030, and 19 CSR 30-24.040).

DNR SWMP is responsible for regulating the management, transport, and disposal of infectious waste for all entities except for on-site management by hospitals under Section 260.203, RSMo, 10 CSR 80-5.010, and 10 CSR 80-7.010.

Joint Responsibilities: DRL and SWMP are jointly responsible for reviewing requests by hospitals for approval to accept infectious waste from small quantity generators and other Missouri hospitals (Section 260.203, RSMo, 10 CSR 80-2.010 (46) and (47), and 10 CSR 80-7.010). APCP is responsible for regulating the emissions from and permitting requirements of incineration of infectious waste (Chapter 643, RSMo). The SWMP is also responsible for permitting requirements of infectious waste incinerators

B. Cooperative Activities

1. DHSS

a. DHSS agrees that DCEE will provide SWMP with technical advice on possible health effects of infectious waste.

b. DRL will coordinate infectious waste activities closely with SWMP. DRL agrees to notify SWMP or APCP of possible violations of DNR statutes and rules.

c. DRL also agrees to investigate all complaints involving management of infectious waste in hospitals under DRL jurisdiction.

d. DRL will coordinate the review of requests by hospitals for approval to treat infectious waste from small quantity generators and other Missouri hospitals with the SWMP. DRL will notify SWMP within 10 days of receipt of a hospital's request for approval to accept infectious waste from off-site. If SWMP has not received the hospital request within 10 days, SWMP will send written notification to the hospital that the request to accept such waste for treatment must be sent by certified mail to both DRL and SWMP.

Review of the submitted information will result either in an approval or denial of the request. If the information submitted does not comply with DHSS requirements, DRL will deny the hospital request to accept infectious waste from off-site. If the information submitted complies with DHSS requirements, DRL will approve the hospital request to accept infectious waste from off-site, contingent upon DNR's concurrence.

As required by Section 260.203.9, RSMo, DRL will respond in writing to each request by a hospital for approval to accept off-site infectious waste with either an approval or a denial within ninety days of receipt of such request. DRL will send SWMP copies of correspondence with hospitals regarding the approval process.

DHSS/DRL has the following responsibilities in approving or denying requests from hospitals to accept off-site infectious waste for treatment:

- Approval of storage, processing, record keeping, and training requirements;
- Approval of treatment method, including equipment specifications and operating procedures as required in DHSS' regulations;
- Approval of the total quantity of infectious waste to be accepted at a hospital offsite;
- Approval of requests to add other small quantity generators and Missouri hospitals to an existing approval when there is question about compliance with DHSS' offsite quantity restrictions; and
- Arrange site visits of hospitals that are not permitted infectious waste processing facilities upon request by DNR staff.

e. DRL will forward all inquiries concerning incineration of infectious waste to APCP and provide a list of medical waste incinerators to APCP for permit determination.

2. DNR

a. DNR agrees that SWMP and APCP will provide DRL with technical assistance on infectious waste treatment and disposal.

b. SWMP and APCP will coordinate their infectious waste management activities closely with DRL, especially the promulgation of solid waste and air pollution rules on infectious waste treatment, disposal and air emission requirements.

c. SWMP staff will notify DRL within one week of any complaint involving management of infectious waste in a hospital.

d. APCP agrees to notify DRL of any requests from hospitals to build and/or operate an infectious waste incinerator within 20 days of the application.

e. SWMP will coordinate the review of requests by hospitals for approval to treat infectious waste from small quantity generators and other Missouri hospitals with DRL. SWMP will notify DRL of receipt of a hospital request within 10 days of receipt of a hospital's request for approval to accept infectious waste from off-site. If DRL has not received the hospital request within 10 days, DRL will send written notification to the hospital that the request to accept such waste for treatment must be sent by certified mail to both SWMP and DRL.

Review of the submitted information will result either in an approval or denial of the request. If the information submitted does not comply with DNR's requirements, SWMP will deny the hospital's request to accept infectious waste from off-site. If the information submitted complies with DNR's requirements,

SWMP will approve the hospital's request to accept infectious waste from off-site, contingent upon DHSS concurrence.

As required by Section 260.203.9, RSMo, SWMP will respond to each request in writing by a hospital for approval to accept off-site infectious waste with either an approval or a denial within ninety days of receipt of such request. SWMP will send DRL copies of all correspondence with hospitals regarding the approval process.

DNR SWMP has the following responsibilities in approving or denying requests from hospitals to accept off-site infectious waste for treatment:

- approval of the sources of infectious waste accepted at the hospital (only small quantity generators and other Missouri hospitals);
- approval of packaging, tracking, transportation, and disposal requirements for infectious waste taken to a hospital for treatment;
- approval of the method of disposal for treated infectious waste, including any residue from the treatment process; and
- referral of an applicant to DNR's APCP or WPP, as applicable, to ascertain any Missouri Air Conservation and/or Clean Water Law requirements for the hospital.

f. DNR may conduct site visits of hospitals to determine compliance with the Missouri Solid Waste Management Law and implementing regulations. DNR personnel will coordinate or arrange for site visits of hospitals that are not permitted infectious waste processing facilities with DRL.

g. In the event an environmental emergency occurs involving infectious waste, the first point of contact shall be DNR's Environmental Emergency Response (EER) section at (573) 634-2436. If warranted, EER will arrive on-site, assess the situation, document site conditions, and coordinate subsequent actions with the SWMP.

h. DNR will defer to the lead law enforcement agency if the lead law enforcement agency plans to pursue criminal charges. At no point in time will DNR be responsible for holding evidence or securing a site for evidence purposes. This responsibility falls under the jurisdiction of the lead law enforcement agency.

i. During active investigations involving infectious waste, coordination shall occur among DRL, DCEE, SWMP and APCP in order to achieve compliance with Missouri's laws and regulations.

Pharmaceutical (or Medication) Waste

A. Roles and General Authority

1. DHSS

Medication waste is regulated under the provisions of this agreement that govern solid waste, infectious waste, hazardous waste and radiologic waste when medication waste is applicable to those categories. DHSS currently regulates medication waste as part of medication management by licensed entities under the following rules:

19 CSR 30-20.100 Hospitals

19 CSR 30-30.020 Ambulatory Surgical Centers

19 CSR 30-26.010 Home Health Agencies

19 CSR 30-35.020 Hospice Facilities

19 CSR 30-35.010 Hospice Programs

19 CSR 30-85.042 Intermediate Care and Skilled Nursing Facilities

19 CSR 30-86.042 Residential Care Facilities

19 CSR 30-86.043 Residential Care Facilities II

19 CSR 30-86.047 Assisted Living Facilities

19 CSR 20-50.030 Prescription Drug Repository Programs

19 CSR 30-1.078 Controlled Substances

2. DNR

Regulation of the disposal of non-hazardous medication waste is the responsibility of the SWMP under Section 260.210, RSMo. The DNR Hazardous Waste Program (HWP) regulates those medication wastes which are listed or characteristic hazardous wastes under Section 260.360(11), RSMo.

B. Cooperative Activities

1. DHSS

DHSS encourages all licensed entities to develop thorough policies and procedures for disposal of medication waste specific for the following categories: hazardous waste, infectious waste, radiologic waste, controlled substances and general

medication waste not included in other categories, when these categories are applicable to the licensed entity. Such policies and procedures should include identification of all medications with special handling requirements for collection, clean up of spills and storage, and specific waste streams for each category.

DHSS will conduct investigations of actual or suspected health effects possibly related to improper pharmaceutical waste disposal at healthcare facilities upon DNR's request as soon as possible.

DHSS recognizes specific requirements for disposal of hazardous medication waste regulated by EPA and OSHA and encourages compliance by all DHSS licensed entities.

DHSS recognizes recommendations from FDA and the White House Office of National Drug Control Policy (ONDCP) for consumer disposal of household medication waste and encourages compliance by consumers and DHSS licensed entities when applicable.

2. DNR

DNR recognizes the potential scientifically-established impact of medication waste to aquatic organisms in state and national waterways. In addition, emerging studies are documenting the presence of medication waste and personal care products in waterways, with potential impacts to humans as well. Therefore, DNR believes and recommends that medication waste should be incinerated or properly land disposed in most instances.

SWMP agrees to provide technical guidance to DHSS, as requested, regarding proper disposal of non-RCRA medication waste. DNR HWP agrees to provide technical guidance to DHSS, as requested, regarding proper disposal of hazardous medication waste.

DHSS and DNR agree to convene an interagency workgroup to review this issue and to determine whether new recommendations may be appropriate for the disposal of medication waste in a manner that is more protective of human health and the environment, but not burdensome to the public and regulated entities.

DNR will investigate possible violations referred to them by DHSS staff as soon as possible.

Section 6: Radiological Emergency Response

A. Overview

The Department of Health and Senior Services (DHSS), the Department of Natural Resources (DNR), and the Department of Public Safety (DPS) recognize the need for radiological emergency response planning, and the need for prompt, effective, and coordinated response actions to protect the people and resources of the state in the event of a radiological incident. Each agency has statutory responsibility in this regard. Each agency has developed programs and professional competence to meet those responsibilities and are committed to cooperative efforts to ensure appropriate actions to protect public health and safety and the environment.

B. General Authority

1. DHSS

Responsibilities of DHSS, with respect to radiation protection, are outlined in Chapter 192, RSMo 1986. Section 192.510 requires DHSS to respond to all radiation emergencies and to coordinate its emergency plans and actions with DNR and DPS. Those functions are performed by DHSS, Radiological Emergency Program (REP).

2. DNR

Article IV of the Missouri constitution designates DNR as the agency responsible for environmental control. Sections 260.500 through 260.550, RSMo and associated state regulations provide DNR the authority to be notified and respond to hazardous substance incidents, which may include radiological incidents. Those functions are performed by the DNR, Environmental Emergency Response (EER) Section.

3. SEMA

The responsibilities of the State Emergency Management Agency (SEMA) within DPS are defined in Chapter 44, RSMo 1986, and are further addressed in the Missouri Nuclear Accident Plan. This agency develops state plans, coordinates plans and activities of other state and local agencies, and provides guidance to local authorities.

C. Roles and Responsibility

1. DHSS

If there is a risk to health or safety, DHSS, REP will serve as the lead agency in subsequent public health actions. The DHSS, REP will follow its Standard Operating Procedures for radiological emergency response operations to assist in making decisions regarding radiological emergencies.

2. **DNR**

If there is no risk to health or safety, but a threat to the environment, DNR, EER will assume the lead role for cleanup oversight. The DNR, EER will refer to Sections 2, 4, and 37 of its Hazardous Substance Emergency Response Plan (HSERP), which is an appendix to Annex N of the State of Missouri Emergency Operations Plan to assist in making decisions regarding radiological emergencies. If a longer-term remediation is required, oversight of the cleanup will transition to staff within the DNR, Hazardous Waste Program, who will coordinate with DHSS, REP on appropriate cleanup levels.

3. **Joint Responsibilities**

DNR, EER and DHSS, REP will coordinate a response to a potential radiological incident based upon all information available. Collection and analysis of samples will be coordinated between DNR and DHSS. SEMA may provide additional resources as necessary to facilitate an effective response to a radiological incident and serve as liaison with other agencies.

D. Cooperative Activities

Each agency agrees to notify the other per Section 2 of this MOU. Additionally, the SEMA Duty Officer will be notified of any radiological incident at (573) 751-2748 by the agency initially aware of the incident.

Emergency response will continue to be a cooperative effort of DHSS, DNR, and DPS. An appropriate response to a radiation emergency could require commitments of personnel, time and resources by all three departments. Each, at the request of another, will provide such assistance as can be made available.

Agencies will conduct joint training/exercises for radiological response activities on a regular basis.

Section 7: Hazardous Waste/Substances

A. Overview

The purpose of this section is to define the activities that the Missouri Department of Health and Senior Services (DHSS) and the Missouri Department of Natural Resources (DNR) conduct in protecting public health and the environment from hazardous wastes and substances and to define the manner in which DHSS and DNR will coordinate their efforts and assist one another to ensure activities are effective and time and cost efficient.

This section provides a common understanding of the responsibilities of DHSS and DNR concerning the investigation, assessment, and control of hazardous substances, which include hazardous wastes, in the environment. This section also outlines the relationship between DHSS and DNR pertaining to the assessment of health effects of hazardous substances in the environment.

The specific DHSS and DNR divisions, sections, bureaus, and units covered by this section are as follows:

DHSS: Section for Disease Control and Environmental Epidemiology (DCEE) and Bureau of Environmental Epidemiology (BEE)

DNR: Division of Environmental Quality (DEQ), Hazardous Waste Program (HWP), Environmental Services Program (ESP), Environmental Emergency Response Section (EER), Brownfield Voluntary Cleanup Program (BVCP), Tanks Section, Federal Facilities Section, Superfund Section, Enforcement Section, and Permits Section

The goals of this section are to define the DHSS and DNR roles, responsibilities, cooperative actions, and agreements related to the protection of human health and the environment from risks posed by hazardous substances in the environment.

B. General Authority

1. DHSS

DHSS has primary responsibility for safeguarding the health of the people of Missouri (Section 192.020, RSMo). Under sections 260.445.5 and 260.391.1(2), RSMo, DHSS is to evaluate the effects to human health of abandoned or uncontrolled hazardous waste sites and of releases of hazardous substances as defined in Section 260.500, RSMo. These evaluations can include immediate investigatory responses to actual or potential environmental contamination and